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OCT 28 1955

"57,000 Investors in Democracy"

HENRY FORD II

President, Ford Motor Company

"In the most practical way possible—the regular purchase of U.S. Savings Bonds—millions of Americans are demonstrating complete confidence in our form of government. Investors in democracy, they are freely staking their personal security on a fundamental faith in the future of our nation. I am proud that today more than 57,000 Ford Motor Company employees are participating in the Payroll Savings Plan. Last year they bought bonds worth $25,000,000 at face value, and this year the total of their purchases will be even greater. Through their thrift they are helping to keep America strong."

Few investment groups are as important to America as the members of the Ford Payroll Savings Plan. They are *important* in size—57,000 men and women . . . important in buying power—they actually purchase $25,000,000 in Savings Bonds every year . . . and *very* important to our economic stability—"through their thrift they are helping to keep America strong."

"Oh," someone may say, "Ford is a big company and they do things in a big way. It's easy for Ford to get thousands of people to sign up for the Payroll Savings Plan."

It was relatively easy for Ford, and it is easy for any company, large or small, to build a good Payroll Savings Plan *if*—(1) The head of the company recognizes the importance of the Payroll Savings Plan to the employees, the company, and the country; (2) *If* he will show the same degree of personal interest that Mr. Ford takes in the Ford Payroll Savings Plan.

If you would like to match Mr. Ford's Payroll Savings record—percentage-wise, of course—all you have to do is to see to it that a Payroll Savings Application Blank is placed in the hands of every man and woman in your company. It will help, of course, if you remind them, over your signature, that the Payroll Savings Plan is a safe and sure road to personal security.

The Savings Bond Division, U.S. Treasury Department, Washington, D. C., is ready to provide all the help you need in the way of Application Blanks, literature, and a complete outline of a simple, person-to-person canvass that will put an application blank in the hands of *every* one of your employees. Your employees will do the rest.

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

DISTRIBUTION AGE

On the Line — DA EDITORIAL COMMENT

Stabilization Ahead

Practically every economic analysis of business conditions for 1953 shows that our optimism for continued good business at the time of the impending Korean truce was sound. You will remember that a great many people thought that our thriving economy was primed, if not almost entirely supported, by defense business; that the Korean armistice would start a depression.

You also may remember this *Daily Worker's* jibe at American business men: "Wall Street shivers with fear at the news of possible peace in Korea!"

Well, shortly after we went to press with the December issue, Wall Street's "cousin," the Federal Reserve Board estimated that the gross national production, despite a slack since mid year, hit a record-breaking total of $368 billion—5 per eent over '52! Private enterprise, rather than government expenditure, was credited for the gain.

Despite these facts, there still are men in important places taking a negative stand. Consciously or unconsciously, they are sparking a business recession talkathon which, if continued long enough, may convince some business men that, perhaps, they should not launch their new projects at this time. Several hundred such decisions could louse up things terribly.

F'r instance: Two weeks after the Federal Reserve Board's estimate was released, a professor of economics at New York University addressed the annual meeting of materials handling equipment manufacturers with a crying towel in each hand. "The recession in business activity, which already has started," he said, "will bring us down from boom-boom levels to a level just below prosperity."

We'd love to lower the boom on the professor. His "below prosperity" line is as ridiculous as the *Daily Worker's* line.

We dismiss the talk as silly, and conclude that the professor is confused. As evidence of his confusion, we offer another observation by him later on in his address: ". . . it appears . . . that personal incomes will decline only moderately . . ."

Keep your eyes on 1954, gentlemen. If business drops from record-high to below-prosperity level, with only a moderate decline in our national record-high personal income ($285 billion—6 per cent over '52), the professor will deserve the world's highest honors for establishing a wondrous new principle of economics!

Now, in a spirit of good sportsmanship and to give the professor an opportunity to lower the boom on us, we say, "1954 will be 2 per cent better than 1952!"

From all of us to all of you, we extend wishes for a Happy and Prosperous New Year!

Yakkety Yak

The fellow pulling on the oars hasn't time to rock the boat.

. . . PM—What some economists don't know is that inventory reduction is industry's *preventive medicine* against recession.

. . . MORE DOGS: The only impressive story we know that this country is going to the dogs is American Can's Survey of dog and cat population. It's a honey!

. . . BETTER INDEX—Federal Reserve Board revised its Production Index to use 1947-'49 as a base for comparisons, and include 175 statistical series instead of 100.

. . . METER AGE—Perfection Stove is introducing a pay-as-you-cool room air conditioner. It's a portable unit with a coin-operated time meter.

. . . SKOL!—Air line hospitality: First free meals; now, free cocktails.

. . . FOURTH FOR FORD—Looks like Ford, Mercury and Lincoln will have another high-priced sister. Official hint: Cosmopolitan.

. . . RUSSKI YAKSKI—All is not red in Russia. Their TV pictures have an eerie green hue—like seeing ghosts of the purged.

. . . There are more telephones in New Jersey than in all of Russia, says Bell. But natch, they're afraid to talk!

H. V. Greene — Editor

LETTERS

TO THE EDITOR

Piggy-Back Protest

To The Editor:

In your November issue you have an article dealing with the so-called Piggy-Back Service.

Mr. Bowman may be correct in his assertion that this operation robs Peter to Pay Paul, a point that I do not wish to argue. But he definitely ignores a rising public demand that the trucking industry must do something about-getting some of their equipment off the public roads of the nation. It seems to me that the Piggy-Back idea is a step in the right direction.

The average busy main highways are getting more and more congested every day with more and more, larger and larger, heavier and heavier trucking equipment till there is very little pleasure in driving down any of the main U. S. routes.

Trucks to the right, trucks to the left, trucks in front and trucks tailgating all at high speed. Our state has a 45 mph speed limit, but I have been passed many times by fully loaded trucks traveling at speeds up to 69 mph. Small wonder that the passenger driver inclined to nervousness gets involved in accidents, many of which are caused by selfish trucking interests who insist on tight schedules or broker their work at such low rates that the drivers have to violate most every law of the land to make a living.

I sincerely believe that the trucking industry has a place in the transportation field. I also believe that the railroads can handle certain traffic to much better advantage than the trucks.

The sooner both fire their high priced lobbyists and get a few practically minded men to work toward both types of transportation living and working together, then and only then will we get out of this mad rush for business and the "Public be d----" attitude both industries have gotten themselves tagged with.

Clarence F. Miller
Merchants & Manufacturers
Warehouse Co.
Flint, Mich.

Piggy-Back is like the olive. Either you like it or you don't, no middle of the road. Few subjects have stirred so much controversy in the transportation field in recent years. For a complete round-up of Piggy-Back information, including pro and con arguments, equipment, labor's attitude. and a brief description of plans in operation, see "Piggy-Back Plan Draws Mixed Reaction," DISTRIBUTION AGE, December, Page 30.—Ed.

Flying the Coop

To The Editor:

I would appreciate information on the company manufacturing the shipping boxes for baby chicks and turkey poults mentioned in the November issue in the article "Flying the Coop."

L. J. Priester
Director of General Services
Air Cargo, Inc.
Washington, D. C.

The boxes in question are manufactured by The Flintkote Co., Pioneer Div., P. O. Box 2218, Terminal Annex, Los Angeles, Cal.—Ed.

Frozen Food Boom

To The Editor:

This Association over the years has worked very closely with Harlan J. Nissen, general manager of the Terminal Refrigerating Co. of Los Angeles, in the matter of developing adequate motor truck equipment for the proper transportation of frozen foods. We note with pleasure the article by Mr. Nissen in your October issue. ("Get In Step With the Frozen Food Boom," Page 24.)

As information of this type is of vital concern and interest to our member carriers, may we have your permission to reproduce this article?

Harry E. Hassett, Manager
Weighing & Inspection Bureau
Motor Truck Association
of California

Permission has been forwarded to Mr. Hassett to reproduce Mr. Nissen's article. It is gratifying to the DA editorial staff that response to this particular article was extremely heavy.

Similar Names

To The Editor:

In the July issue Leo Parker discussed the question, "Can a warehouseman stop a new competitor from using a name similar to his firm's name?" I am confronted by a situation that is covered by his answer. I am contemplating filing a suit and would appreciate any information you can supply.

Our name, Baggage & Omnibus Transfer Co., has been active and in use since 1882. However, the public and our own people have used an abbreviated form, namely B&O Transfer Co. It has been used verbally and in our stationery. This name had not been registered with the State of Oregon.

About three years ago a competitor started a warehouse across the street from us under the name of B&O Warehouse Co. Since then we have had no end of confusion with the public, the railroads, and government agencies.

I will appreciate any advice or information you can supply.

L. Weisensee
President
Baggage & Omnibus Transfer Co.
Portland, Ore.

After reviewing my records and listed Higher Court decisions, my opinion is as follows:

You can sue and stop the B and O Warehouse Co. from continuing use of this name, especially in view of the fact that you can prove that the public, railroads and government agencies have been confused by use of this name by your competitor.—Leo T. Parker, DA Legal Consultant.

Carton Handling

To The Editor:

We would be interested in knowing what other concerns are using to handle the large cardboard rayon cartons. The particular unit we are concerned with would be similar to the one used by duPont.

Edward C. Lafferty
Plant Manager
Greenville Mills, Inc.
Greenville, N. H.

When you speak of the cardboard rayon cartons used by du Pont, we find that these vary considerably, and in the Rayon Industry, we also find that there is sometimes a tendency to reuse cartons. Also, different manufacturers pack the materials in the cartons tighter than others; and so we have a package which is not uniform in every instance.

(Please Turn to Page 98)

Chuting the NEWS

57 Experts to Address Conference At Maintenance & Engineering Show

Fifty-seven experts, drawn from all industries, will address the Plant Maintenance & Engineering Conference, to be held in Chicago, concurrently with the Plant Maintenance & Engineering Show, Jan. 25-28. The conference will take place at the Hotel Conrad Hilton and the show at the International Amphitheatre.

Highlights of this year's conference will be a panel headed by 16 speakers at the close of proceedings to answer delegates' questions. Two round tables will be devoted exclusively to the respective problems of eight industries, chemical, brewing and distilling, food processing and packaging, paper mills and paper products, petroleum refining, sheet metal, steel mills and textiles.

In addition to three general sessions, which all may attend, the program will be divided into 11 sectional conferences and 20 round tables so that discussion groups may be smaller. Many of the sessions will emphasize materials handling equipment in maintenance.

Crane Crossing

Traffic Lights in Craneway Promote Safety at Steel Plant: Standard Pressed Steel installed sets of photo-electric eyes at three heavily traveled cross-aisles. Crane cuts beam 20 ft from aisle center, start red lights blinking continually until crane passes

SIPMHE Appoints Six Directors At Meeting of National Officers

Six new directors for the Society of Industrial Packaging and Materials Handling Engineers were appointed and four others were reappointed at a meeting of the national officers of the organization in Chicago Dec. 7.

Three new regional directors were among those appointed. They are: Eastern—Frank W. Green, industrial consultant, Springfield, Mass.; Central—A. M. Lownsbury, Railway Warehouses, Inc., Cleveland, Ohio; Western—C. L. Lippman, Columbia-Geneva Division, United States Steel Co., San Francisco.

The other three new directors are Dean H. C. Rountree of Temple University, Philadelphia; P. O. Vogt of General Electric Co., Schenectady, N. Y., recently retired as chairman of the board of SIPMHE; and J. L. Ware, American Excelsior Co., Chicago.

Reappointed directors are R. C. Cragg, R. H. Freeman, W. L. Utley, and M. C. Weisenhorn.

(*Please Turn Page*)

Coming Events

Jan. 6-7—Atlantic States Shippers Advisory Board, Washington, D. C.

Jan. 11-13—Truck-Trailer Mfrs. Assn., Annual Convention, Boco Raton Hotel, Boca Raton, Fla.

Jan. 11-15—SAE, Annual Meeting, Sheraton-Cadillac and Statler Hotels, Detroit, Masonic Temple, Detroit, Mich.

Jan. 12-13—Middlewest Shipper-Motor Carrier Conference, Omaha, Neb.

Jan. 12-15—Highway Research Board, Annual Meeting, National Academy of Sciences, Washington, D. C.

Jan. 12-29—Sixth Institute of Industrial Transportation & Traffic Management, American University, Washington, D. C.

Jan. 20-21 — Mid-West Shippers Advisory Board, Chicago, Ill.

Jan. 21-22—National Wooden Box Assn. 55th Annual Meeting, Drake Hotel, Chicago, Ill.

Jan. 25-28—Plant Maintenance Show, International Amphitheatre, Chicago, Ill.

Jan. 26-28—Southwest Shippers Advisory Board, Dallas, Tex.

Jan. 27-28—Northwest Shippers Advisory Board, Minneapolis, Minn.

Jan. 28-29—National Council of Private Motor Truck Owners, Inc. (15th Annual Meeting), Chicago, Ill.

Feb. 1-5—Frozen Food Packers Convention, Hotel Commodore, New York, N. Y.

Feb. 10-11—National Traffic Committee, Washington, D. C.

Feb. 14-18—National Furniture Warehousemen's Association Annual Convention, New Orleans, La.

Feb. 17-19—National Transport Vehicle Show & Fleet Maintenance Exposition, New York, N. Y.

Feb. 17-19—White House Conference on Highway Safety, Washington, D. C.

Feb. 21-27—National Frozen Food Merchandising Convention and Exposition, 71st Regiment Armory, New York, N. Y.

Mar. 2-4—SAE, Passenger Car, Body and Materials Meeting, Hotel Statler, Detroit.

Mar. 9-10—Ohio Valley Transportation Advisory Board, Columubus, Ohio.

Mar. 11-12—Pacific Coast Shippers Advisory Board, San Diego, Calif.

Mar. 24-25—New England Shippers Advisory Board, Boston, Mass.

Apr. 25-29—AWA 63rd Annual Meeting, Boca Raton Hotel and Club, Boca Raton, Fla.

May 4-6—5th Highway Transportation Congress, NHUC, Mayflower Hotel, Washington, D. C.

May 24-27—ATA, Terminal Operations Council, Annual Meeting, St. Louis, Mo.

Chuting the News

(Continued from Preceding Page)

MHI Elects Elledge President, Names Eight New Section Directors, Schedules Next Show for 1956

Charles B. Elledge, of General Electric Co., Schenectady, N. Y., was elected president of the Material Handling Institute at the Annual Meeting in New York last month. Elledge succeeds Howard M. Palmer, of Lewis-Shepard Products Inc., Watertown, Mass. (see Page 38).

Walter E. Schirmer, Clark Equipment Co., Buchanan, Mich., and Edward W. McCaul, Jervis B. Webb Co., Detroit, Mich., were elected first and second vice presidents, respectively.

The following eight new Product Section directors also were named: Roland Whitehurst, Electric Storage Battery Co., Electrical Accessory; W. G. Reycroft, Bassick Co., Wheel and Caster; D. H. Bitney, Union Steel Products Co., Container and Rack; R. L. Fairbank, Towmotor Corp., Gasoline Truck; C. O. Hedner, Yale and Towne Mfg. Co., Electric Hoist; Wayne O. Stoughton, Pittsburgh Steel Products Co., Pallet; John W. Stiles, Island Equipment Co., Conveyor; George E. Raymond, Jr., Raymond Corp., Hand Lift Truck.

Directors whose terms did not expire this year include: Wilbur Mayer, Louden Machinery Co., Monorail; W. B. Renois, Gerrard Steel Strapping Div., Steel Strapping; S. K. Towson, Elwell-Parker Electric Co., Electric Truck, and M. G. Peck, Clark Equipment Co., Powerized Hand Truck.

In addition to the installation of officers and presentation of annual committee reports, it was announced that a three-year policy has been adopted by the Exposition Committee, with the next show scheduled for 1956, in Chicago.

Guest speaker at the luncheon was Dr. Jules Backman, professor of economics, New York University. Dr. Backman spoke on economic prospects for 1954 in comparison to economic activity of the immediate past.

First Flight

Test Run Mail Lift: Presidents of four airlines participating in Post Office test runs on air shipment of regular mail between Washington-Chicago and New York-Chicago are shown with Postmaster General at Oct. 6 inauguration of new service in nation's capital. They are from left to right—J. H. Carmichael, Capital Airlines; Ralph S. Damon, Trans-World Airlines; Postmaster General A. E. Summerfield; C. R. Smith, American Airlines; and W. A. Patterson, United Air Lines

Warehouse Merger

Northwestern Transfer Co. has been authorized by the ICC to purchase all the capital stock of Liberty Transfer & Storage Co. and to merge the operating rights and property, Pete Pihl, president announced. Operations of the firm embrace over-the-road trucking in Oregon and Washington as a common carrier over irregular routes of general commodities and household goods.

—DA—

Board of Directors Open Air Meeting

Board of Directors of Allied Van Lines, Inc., meet on site of new $260,000 eastern terminus in Secaucus, N. J., at recent ground-breaking reremonies: L. to R.—C. D. Morgan, Morgan Brothers, New York City; Fred Petry, Petry Express, Trenton, N. J.; Richard LaBelle, LaBelle Safety Storage, Minneapolis, Minn.; A. V. Cresto, Federal Van & Storage, Kansas City, Mo.; D. J. Dalberg, Westheimer Transfer & Storage, Houston, Tex.; Harry L. Gormley, Keystone-Lawrence Transfer & Storage, New Castle, Pa.; James J. Barrett, Empire Warehouse, Chicago, Ill.; James H. Hawthorne, exec. vice-pres., Allied Van Lines, Broadview, Ill., and Louis Schramm, Jr., pres., Allied

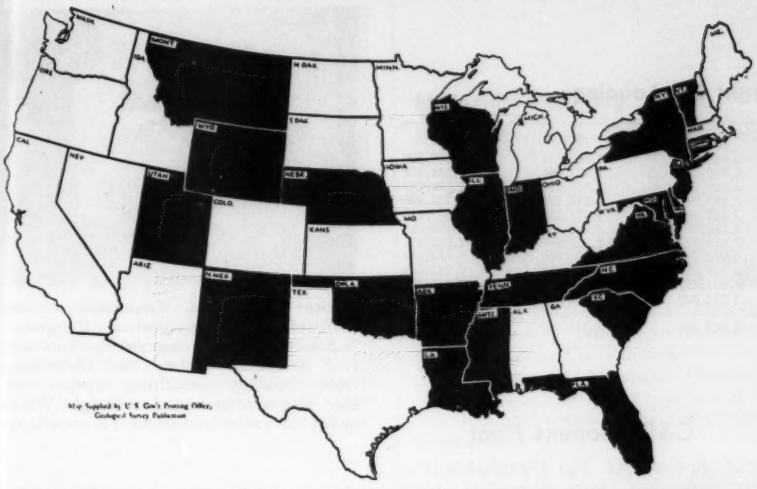
Allied Van Constructing New Eastern Terminus

Celebrating its 25th year of operations, Allied Van Lines, Inc., is constructing a new $260,000 terminus in Secaucus, N. J., to house the future northeastern U. S. operations of the company. The two-story brick building comprises 15,000 sq ft of air conditioned office, dormitory and warehouse space and parking facilities for 85 vans.

The terminal will replace Allied's present location in New York, N. Y., and also enable the company to have a central point for consolidation and dispersion of long-haul shipments to and from the metropolitan New York area.

The terminal will occupy a 4½-acre tract adjacent to a New Jersey Turnpike entrance.

Highway Tax Diversion



States shown in white have constitutions amended to prohibit diversion of highway taxes. Such amendments are being sought in states shown in black

ICC Modifies Brake Requirements

The Interstate Commerce Commission has modified its motor carrier safety regulations covering brake requirements. The modified regulation is in Ex Parte No. MC-40, Part 193, 42(c), dealing with parts and accessories for safe operation and formerly read: "Trucks and truck-tractors having three or more axles need not have brakes on the front wheels." The amendment now reads: "Trucks and truck-tractors having three or more axles need not have brakes on the front wheels, except when such vehicles are equipped with at least two steerable axles, the wheels of one such axle need not be equipped with brakes."

—DA—

Wooden Box Convention

Prospective 1954 markets for nailed wooden boxes and crates and analysis of business conditions as they effect the industry will highlight National Wooden Box Association's 55th annual meeting, Jan. 21-22, at the Drake Hotel, Chicago.

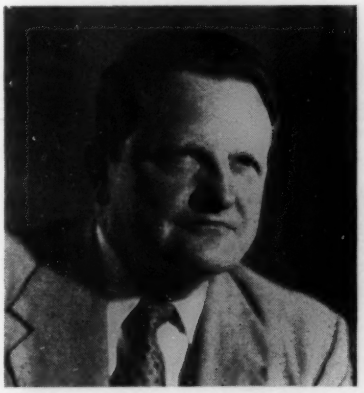
—DA—

Allied Distribution Inc. announces the addition to its membership of the Pierce-Holdcroft Terminal Warehouse, Inc., Sioux City, Iowa.

First Moving Sidewalk

Contract to build the world's first passenger conveyor belt system has been awarded to the Goodyear Tire & Rubber Co. and the Stephens-Adamson Mfg. Co. by the Hudson & Manhattan Railroad Co. The 227 ft "Speedwalk" will move at 1½ mph with two handrails moving at the same speed. The system will be installed in the ramp portion of the connecting tunnel between Erie station and the Hudson & Manhattan tubes at Jersey City.

Oliver D. Colvin



Temporary chairman of the U. S. National Committee of the International Cargo Handling Coordination Association, a group recently organized seeking reduction in ship turn-around time in port and improvement of efficiency in all aspects of packaging, transport, handling and stowage of goods

Knudson Commends Lake Carriers on New Record

James K. Knudson, DTA administrator, commended members of the Lake Carriers Assn. for the new iron ore record movement of nearly 96 million gross tons for the 1953 season. This was almost 4 million tons above the old mark, established in 1942.

—DA—

Development of a million-dollar warehouse center for Jacksonville, Fla., is being launched by three major warehouses in cooperation with the Southern Railway System on a 50-acre tract. Service Warehouse Co., Inc., Vann Warehouse Co., Inc., and Peninsular Warehouse Co. have contracted for three new warehouse plants at a cost of $300,000 each.

—DA—

AAR Re-elects Faricy

William T. Faricy was re-elected president of the Association of American Railroads by the new board of directors following the recent annual member road meeting of the organization in Washington, D. C. Faricy has been president of the AAR since 1947.

—DA—

The Maritime Administration, U. S. Department of Commerce, will extend to Sept. 7, 1955, all war risk insurance binders now in effect. This will cover vessels for the duration of the War Risk Insurance Act, which expires in 1955.

—DA—

Hall of Fame

The name of Harvey S. Firestone, Jr., Chairman of The Firestone Tire & Rubber Company, will be placed in the Hall of Fame of Distribution which has been established by the Boston Conference on Distribution to honor men and women who have made outstanding contributions in this field over the last 25 years.

(Please Turn Page)

Chuting the News

(Continued from Preceding Page)

Railroad Revenue Freight Car Loading

		1953	1952	1951
January	(5 wks.)	3,352,053	3,561,719	3,660,523
February	(4 wks.)	2,730,852	2,911,090	2,834,472
March	(4 wks.)	2,801,603	2,867,583	2,998,963
April	(4 wks.)	2,957,088	2,912,199	3,152,196
May	(5 wks.)	3,883,088	3,677,596	3,977,393
June	(4 wks.)	3,203,942	2,605,738	3,294,766
July	(4 wks.)	2,963,805	2,236,088	2,993,321
August	(5 wks.)	4,022,382	3,882,069	4,120,219
September	(4 wks.)	3,153,226	3,363,834	3,311,846
October	(5 wks.)	4,024,439	4,156,014	4,316,505
November	(4 wks.)	2,796,888	3,139,489	3,138,884
Total		35,889,366	35,313,399	37,799,088

—DA—

United Hits New '53 High

United Air Lines in 1953 recorded the highest volume of traffic in its 27-year history. Revenue passenger miles are expected to total approximately 2 billion 700 million, up 13 per cent; air freight, 28,500,000 ton miles for a 4 per cent increase; air express, 11,350,000, up 11 per cent, and air mail, 21,000,000 ton miles, off 4 per cent.

—DA—

Perkins Trucking Co., Inc., has constructed a new terminal in Hicksville, Long Island, which features an island platform with 22 truck bays.

—DA—

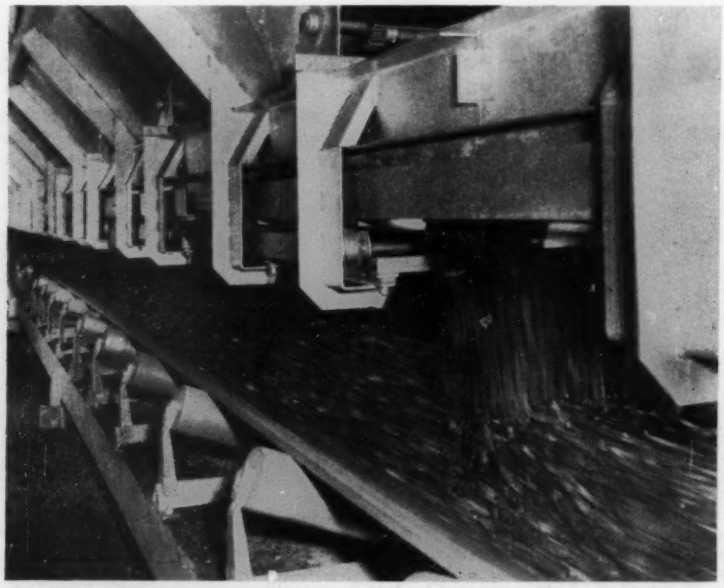
C&D Reopens Plant

A fire swept the Conshohocken, Pa., plant of C&D Batteries, Inc., Nov. 30, uncontrolled for four hours, and causing an estimated $1 million damage. Through the assistance of employes and cooperation of competitors, neighboring industries, customers and suppliers, the new plant went into production Dec. 7, using leased facilities.

—DA—

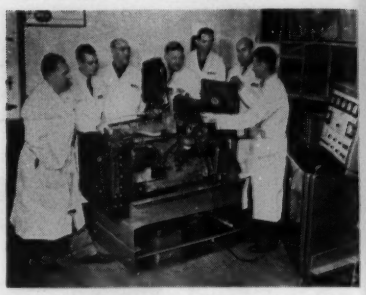
The San Francisco Civic Auditorium will be the site of the Fifth Western Packaging and Materials Handling Exposition Aug. 17-19, 1954.

World's Longest 72-in. Conveyor Belt



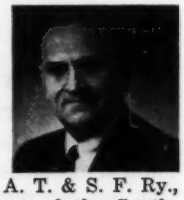
Coal pours out of a rail car onto a conveyor belt which carries it to a riverboat at the Rail-to-Water Transfer Corp., Chicago. Pictured here is the longest 72-in. conveyor belt in the world—942 ft long and a product of the U. S. Rubber Co. The rubber belt has an operating speed of 560 ft per min

Maintenance Program



White Motor Co. Inaugurates New Maintenance Management Program: A 3-way training program has new service training center in Cleveland, Ohio, in-shop consulting service, college courses provided through White grant to raise maintenance standards

Traffic Items



John P. Dennis —newly elected president, Traffic Club of New York, Inc. He is traffic manager, Texas Co.

Wally D. Burck, A. T. & S. F. Ry., was elected president of the **Southeast Traffic Club of Los Angeles, Cal.**

"Evaluation of Available Education in Transportation" was the subject of a forum conducted by the **New York University chapter of Delta Nu Alpha** Dec. 11.

At the December meeting of the **New York Chapter of Delta Nu Alpha,** Mr. Herbert Effron, vice president of Van Dyk and Reeves, Inc., spoke on "What Industry Expects From a Modern Traffic Department."

Robert A. Jones, supervisor, Manhattan Shirt Co., was elected president of the **Traffic Club of North Jersey.**

Louis Magee, Keystone Traffic Bureau, Pittsburgh, Pa., spoke on the topic, "Growth and Development of the Rate Making Body of the Motor Carrier Industry," before the December meeting of the **Pittsburgh Chapter of Delta Nu Alpha.**

"The Magic Barrel" was the topic of a speech by Spurgeon K. Britt, Humble Oil & Refining Co. at the December luncheon meeting of the **Traffic Club of Houston.**

—DA—

Dorsey Trailers, Inc., held its 1953 convention, Dec. 4-6, at the Hotel San Carlos, Pensacola, Fla. A. W. Greene, editor, DISTRIBUTION AGE, gave the keynote address on "Optimistic Business Outlook for 1954."

Long Life Drip Pan

Plastic Drip Pan Installed in Reefer Cars: Thomas W. Firth, general supervisor engineering, Despatch Shops Inc., flanked by Roger Knowles and Charles Miner, Owens-Corning Fiberglas Corp. examine new pan weighing 50 lb lighter than galvanized steel pans, and expected to last life of car

Joint Meeting

A joint meeting of the Philadelphia, Pa., chapters of the SIPMHE and the AMHS was recently attended by more than 150 members of both organizations. N. F. Behme, a member of the Classification Board, American Trucking Assn., was the guest speaker.

—DA—

Two New Warehouses

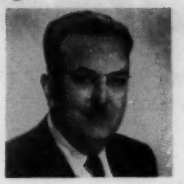
Two 10,800-sq ft standardized warehouses, one at Shellman, Ga., and the other at Wakefield, Va., are being constructed for the Columbian Peanut Co., Norfolk, Va., by the Luria Engineering Co., Bethlehem, Pa.

Another Long Haul

Chicago to Pittsburgh in three days: (Left to right) Steve Lucas and Dick Joyce, Joyce Bros. Storage & Van Co., join James Kyle, Koppers, Inc., in watching last 40 ton of office furniture and equipment being loaded for the transfer of Koppers branch office from Chicago to Pittsburgh, which Joyce Bros. completed in three days

MEN in the NEWS

Materials Handling



John A. Matousek, left, formerly vice president of manufacturing, Baker-Raulang Co.—named vice president and general manager. Ernest R. Scovil, right, formerly secretary of the company—named secretary and treasurer.

Madison L. Crawford — appointed advertising manager of The Frank G. Hough Co., formerly with General Foods and Clark Equipment Co.

Calvin A. Burton—appointed general sales manager, Alvey Conveyor Mfg. Co.

William E. Johnson—named sales manager, New York City branch, Automatic Transportation Co.

George O. Bohrer—appointed chief engineer, Magnesium Co. of America; C. Ridgely Kemp, vice president in charge of production—appointed to newly created position of vice president in charge of research and development; William R. Davison, also vice president of Magcoa, succeeds Kemp.

Harold O. Washburn, left, former president, American Hoist & Derrick Co.—elected chairman of the board. John E. Carroll, right, former vice-president of sales—elected president. James F. Bishop—elected vice president and treasurer; D. B. Botkin and R. J. Stoddard—re-elected vice presidents of the firm.

E. E. Esgate—elected a vice-president of The Thew Shovel Co., formerly assistant to the general manager. He joined the company in May, 1949.

Packing & Packaging

John H. Fettinger, Sr. — appointed assistant manager of Robert Gair Co., Inc., Thames River (Conn.) Div.

J. R. Bemis, president and general manager, Ozan Lumber Co.—named president, National Lumber Mfg. Assn.

Ernest E. Brown—appointed general manager, Multiwall and Specialty Bag Plants, National Container Corp.

William H. Hunt—elected vice president and director, United States Plywood Corp.

Traffic

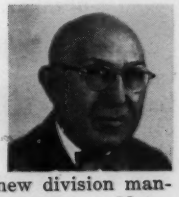
W. B. Richards—appointed traffic manager, Parsons Ammonia Co., Inc. He succeeds Charles H. Webb, retired.

E. A. Whitehouse—promoted to export-import traffic manager, Mathieson Chemical Corp.

Ernest W. Downing—appointed to the staff of the traffic dept., Hewitt Rubber Div., Hewitt-Robins Inc.

Thomas W. Kimmerly—appointed general traffic manager of a newly established General Traffic Div., Burroughs Corp.

—Highway



John C. Keplinger — elected president, Hercules Motors Corp. He started with the company in 1926 as sales manager.

W. E. Presnell—new division manager, Western Div., Interstate Motor Freight System.

E. Ward Hartranft and John R. Kruth—appointed terminal managers, Syracuse, N. Y., and Erie, Pa., respectively, The Western Express Co.

Jack Lawrey — appointed district manager, Toledo, Ohio, Long Transportation Co.

Charles Balough—new chairman of the board of directors, Mercules Motors Corp.; Lawrence G. Downey and George W. LaSalle—appointed vice presidents.

Joseph O. Young—appointed new vice-president of Trailmobile Inc., promoted from his present position of general manager of branch operations.

Pallet type "Walkie" truck 4000 to 6000 lb. capacity.

Engineered

TO FIT YOUR JOB . . .

Model G. A. Tractor.

*CUSTOM BUILT OR . . .
. . . STANDARD MODELS

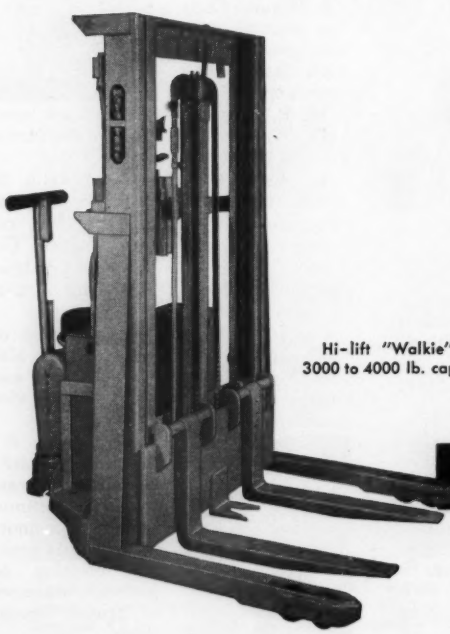
Whether your materials handling job requires special applications or is adaptable to standard models, the cost is relatively the same.

Our Engineers will welcome the opportunity to discuss YOUR particular material handling job . . . Moto-Truc's *can* be engineered to fit the job. Investigate their "Job application" offer in the economical "Walkie" type lift trucks. Your inquiry will receive prompt attention.

SEND FOR BULLETIN #53

. . . AT NO EXTRA COST*

Platform "Walkie" type 4000 to 10,000 lb. capacity.



Hi-lift "Walkie" type 3000 to 4000 lb. capacity.

Representatives in Principal Cities

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Pallet . . . Platform . . . Hi-Lift Trucks

LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"

MOTO-TRUC
Designers FOR THE INDUSTRY
PATENTED

Circle No. 106 on Card, facing Page 51, for more information

Washington DA

By Karl Rannells, *Chilton Washington News Bureau*

Expansion Programs Production facilities for materials handling equipment will have been expanded sufficiently to take care of the nation's mobilization needs for the present just as soon as planned expansion is completed. Expansion programs for this and 119 other categories have been closed and are no longer eligible for tax amortization certificates, ODM says. Enough certificates are now out to permit the materials handling industry to increase its capital investment by $30 million over 1950 to a total of $155 million.

Also included among the 120 expansion goals now closed and shut off from tax-am certificates are mining machinery, power cranes and shovels, railroad production equipment, heavy metal tanks, metal cans, and steel strapping.

Expansion goals have not been met in several other classifications of distribution equipment and facilities, however. Freight car expansion is only 69 per cent completed; ocean going tankers, 69 per cent; specified inland waterways vessels, 53 per cent; domestic oil pipelines, 63 per cent; and commercial aircraft, about 95 per cent. All are eligible for tax-am certificates.

Building Outlook Most warehousing and loft construction has been excluded from government incentives, except for grain storage. But construction in this field is certain to break all dollar volume records for 1953 when final figures are in. Not only this, but the Bureau of Labor Statistics expects such construction to set a new record next year, climbing to perhaps as much as $850 million in new starts for 1954—an increase of about 15 per cent over 1953.

This picture won't hold true for construction generally, however. Officials look for overall building activity to level off during 1954, perhaps lag behind 1953 by as much as $1 billion. This would still be a lot of building—about $34 billion.

Highway construction is also expected to rise about 10 per cent to $3.5 billion. Railroad construction is seen as riding along at present rates of $475 million. Pipeline construction is forecast as showing a gain of 10 per cent, or up to a $300 million total.

Guaranteed Occupancy Department of Agriculture last month was applying the brakes to its program of guaranteeing occupancy to commercial warehousemen who would build new storage space suitable for handling grain crops under crop supports. Reason: Gentlemen's agreements by the Department through the first week in December had already covered enough new space to take care of 230 million although the original goal was only 200 million. This doesn't necessarily mean Agriculture has overshot its mark. Actually, no contracts are on paper. It was expected that cancellations would probably shake the total governmental guaranteed space down to the original goal by time actual contracts are signed.

Packaging Problems Federal officials are not only running into warehousing problems in relation to agricultural price supports but other dilemmas keep turning up. For example, butter must be repackaged at government expense, sometimes reprocessed. When taken over by the government, butter is purchased in bulk in 50-to-70-pound cartons. It must be re-packaged in one-pound prints and repacked in 32-pound cartons at a cost averaging about 1¼ cents a pound for government distribution. Including December contracts, some 55 million pounds have been re-packaged so far this fiscal year which began July 1.

Trip Lease Ban Delayed Additional postponement of the ban against trip leasing has been ordered by the Interstate Commerce Commission. Effective date of the order affecting trip lease and interchange would have been next March 1, postponed from last September at the request of congressional committees. Under present orders, the date will be March 1, 1955, and in the meantime the regulation has been reopened for further hearings.

Army Repair Shops Moved Retrenchment steps planned by the Quartermaster should result in more repair work on materials handling equipment being thrown to private firms. Definitely in the cards is the transfer of repair and maintenance facilities of the Sharpe General Depot, Lathrop, Calif., to the General Depot at Ogden, Utah. Also, similar facilities at Belle Mead General Depot, Somerville, N. J., are to be shifted to the Quartermaster Depot at Jeffersonville, Ky. Repair shops at Memphis which handle cargo parachutes and heavy drop equipment will also be transferred to Jeffersonville. Main reason for these moves are that with a reduced work load, private firms will save the Army money in many instances.

(*Please Turn Page*)

Washington DA

Continued from Preceding Page

Federal Services Business and industry will shortly have to pay more for issue of patents, certificates, and other services of the government. Orders to revise fee schedules were handed down to all departments in November by the Budget Bureau which said Uncle Sam is pricing such activities at less than cost. Proposals for increases in Interstate Commerce Commission fees were slated to be in the hands of the managing director by the first week in January. Agriculture Department has already set up an increased fee schedule for grain inspection, was expected to have other fee schedules ready by January.

Pipeline Trends Construction of more—and bigger—pipelines for distribution of both crude oil and petroleum products is in the cards for the foreseeable future. In looking over the progress of the industry for the past three years, the Interior Department finds the trend is toward larger than 12-in. pipe for crude transmission and toward larger than 8-in. for distribution of refined products. Allowing for pipeline taken up and replaced with new, sometimes larger, the net gain in length for transmission lines was 17,600 miles in three years. Total for the country is now nearly 171,000 miles.

Postal Contracts Labor and management leaders associated with the trucking industry have banded together in the newly organized Independent Advisory Committee to the Trucking Industry with the avowed purpose of seeing that truckers get a fair share of the nation's growing freight business. First goal, they say, is to cut more deeply into something like $160 million worth of mail contracts now transported by rail over routes of 300 miles or less. On the basis of Post Office figures for the more than 450 T-routes now in operation, shifting to trucks would save the government about $80 million annually.

Space Seeker Defense Department has issued orders at top level that all obsolete and any surplus items no longer needed must be cleared out at the earliest possible date. Idea is double-barreled. It is that such action will loosen up considerable storage space and at the same time help to reduce carrying charges on storage of essential items. Surplus items were ordered sold but disposal of items nobody wants is left to discretion of the assistant secretary in charge.

Mail Hauling More postal business for highway carriers is one of the targets set by ACT—the Independent Advisory Committee to the Trucking Industry. Short haul business by truck now amounts to $9 million. Estimates are that an additional $180 million could be transported by highway.

Taxes Uncertain As Congress convenes for its 1954 session, the tax picture is cloudy. The gap between federal revenue and expenditures continues. The House tax writing committee faces a series of proposals, with more to be drafted. Current feeling is that a sales tax of a general nature will not be considered. Checks at the congressional level indicate that a majority stands ready to vote down proposals for a manufacturing tax. Reliable opinion is that it all means that scheduled reductions in corporate rates and some excises are in jeopardy, including automotive. Belief is general that the excise base will be widened, regardless of whether present rates go down.

Highway Funds Chances seem good that Congress may vote increased funds for federal aid to highways—how much more than the current $575 million is anybody's guess. In any event, it is not likely to reach $900 million, the figure advocated by state highway officials. Meanwhile, early figures indicate more than $3.1 billion going into highway building this year. Officials in the Department of Commerce expect the 1954 total to reach $3.5 billion, establishing a new record.

Atomic Power For Vessels Shelving of plans for an atomic-powered Aircraft carrier by the Navy earlier this year doesn't mean the government has stopped thinking about it—or planning for it. Work was postponed for reasons of economy. Navy still believes that ocean supremacy of the future will be held by the nation first converting its ships from oil to atoms. Newport News Shipbuilding & Dry Dock Co. has been given authority to go ahead on its own with a study looking to development of a reactor (engine) for surface ships, now that the submarine development is a success.

Capital Trends An upswing in aircraft factories was in progress before Christmas, seemed likely to continue toward spring despite the outlook that some lay-offs on the West Coast and mid-West seemed in the cards.

. . . Federal officials now have hope of getting aluminum output next year up to present effective capacity of 2.6 billion pounds. Unofficial figure for year just completed is 2.4 billion.

. . . Trade groups estimate that states "lost" 3,600 miles of road last year because of diversion of highway taxes.

. . . New attempt will be made this year to get the federal government to withdraw from the gasoline tax field.

. . . State highway officials will try to get federal highway aid raised to $900 million a year, get federal share changed from present 50 per cent to 75.

. . . Chances of any major revision of Taft-Hartley law are definitely less than 50-50 in the current congressional session.

. . . Stockpiling policy with respect to rotation and replacement of low-grade with better quality is being reviewed.

Conveyors handle over 5 million parts and supply items annually, reduce personnel 34%, shipping 6 to 2 days

DA FEATURE ARTICLE

Conveyor 'Airlift' at Kelly Air Force Base

MECHANIZED handling of over 5 million parts and supplies at Kelly Air Force Base, San Antonio, Tex., has resulted in a 34 per cent reduction of employees to accomplish a work load that has increased 16 per cent in tonnage and 9 per cent in items handled.

661,014 Tons Annually

In 1945, it took 6,540 men to handle the base's 584,345 tons, composed of close to 4.5 million separate items. Last year, the staff was down to 4,600 employees, but the load had risen to approximately 661,014 tons and 5,161,534 items handled.

The average time required to ship an item has been reduced from six to two days at Kelly.

The base utilizes 5,250,000 sq ft of covered storage and 7,332,000 sq ft of open storage divided among three general areas with a stock of 487,834 different items.

13,089-ft Conveyor System

The one piece of equipment that probably has contributed most to Kelly's mechanization is the overhead conveyor system for "airlifting" items throughout the three storage areas—East Kelly, North Kelly, and Industrial Kelly.

The combined length of the system is 13,089 ft. The East Kelly system alone is 5,552 ft long. It connects and services the interior of three storage buildings, each of which is 180 x 960 ft, where motor vehicles, earth moving equipment and their related parts are stored to supply the area west of the Mississippi. This is believed to be the longest overhead conveyor system of this type in the world.

At North Kelly, where bulk stock for supplying all depots on a world-wide basis is stored, the conveyor line is slightly shorter, but services six buildings 200 x 800 ft each. It consists of 5,415 ft of conveying chain which handles 271 trucks, hooked on at 20-ft intervals. Heavy-duty platform trucks for bulk and palletized material, and shelf-type trucks for smaller items, are used on this line so that all sizes and weights of material may be carried. The

Please Turn Page

Below, standard Air Force "crash" truck with mechanized conveyor bed prepares to unload palletized supplies onto booster chain conveyors into warehouse. A booster belt, at right, carries supplies from air freight terminal into plane

Conveyor 'Airlift' . . .

(Continued from Preceding Page)

stock handled is composed mostly of aircraft surface parts, aircraft engines and communication equipment.

Drawbridges Used

This line spans a double railroad track in two places (see cover) where Kelly-designed drawbridges are used. These drawbridges are necessary to permit the switching of railroad cars, for loading and unloading purposes. Traveling at a speed of 100 fpm, the conveyor makes a complete revolution in 54 minutes.

The installation at North Kelly eliminated the need of 135 trailers, 10 tugs and 9 forklifts. Congestion was relieved within warehouses and between buildings. Stocktracers are within easy reach of the conveyor at all times.

Industrial Kelly, smallest of the three areas, has a conveyor length of 2,122 ft. It services the interior of the largest warehouse in the Industrial Kelly area, which contains a total of 205,790 sq ft of floor space. It handles such items as aircraft accessories, generators, starters, super-chargers, instruments and propellers. The Base's extensive conveyor system greatly facilitates the movement of property from the receiving area into the storage area, when property is received, and from the storage area to the packing area when material is shipped.

Roller and Belt Types Used

Both dead and live roller types of roller conveyors are used on this base. Throughout the supply operation there are 20,720 ft of the dead roller type conveyor. Connecting these are powered belt conveyors for moving supplies onto different levels. Lightweight portable conveyors also are kept on hand and can be set up wherever needed.

Crash Trucks Are Conveyors

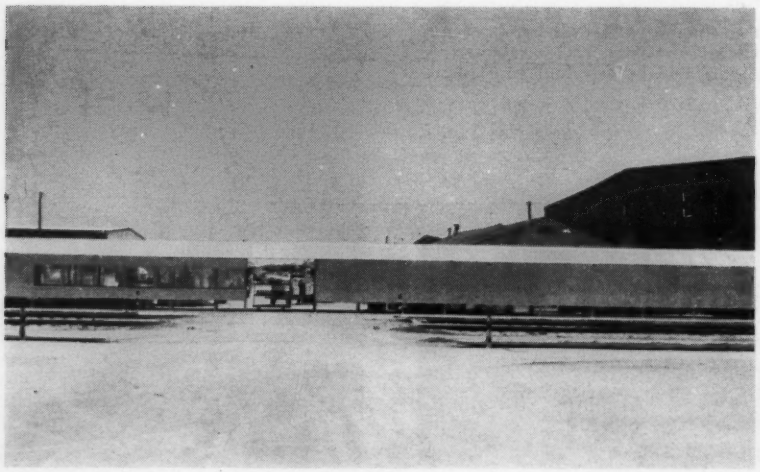
An interesting equipment adaptation for handling supplies between the various areas at Kelly Field is the use of standard, 25 ft, Air Force crash trucks. These vehicles are tractor semi-trailer combinations.

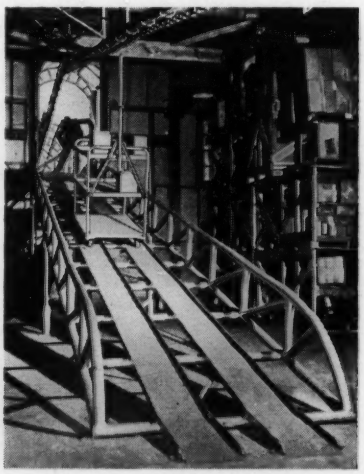
The tractors are of the standard highway type. The semis appear from a distance to be of the conventional flat-bed type. Basically they are, except that the floor is made up of four rows of conveyor rollers instead of the conventional flooring. The rollers are spaced so that a pallet is accommodated by two rows. Thus, two rows of pallets, side by side, can be carried.

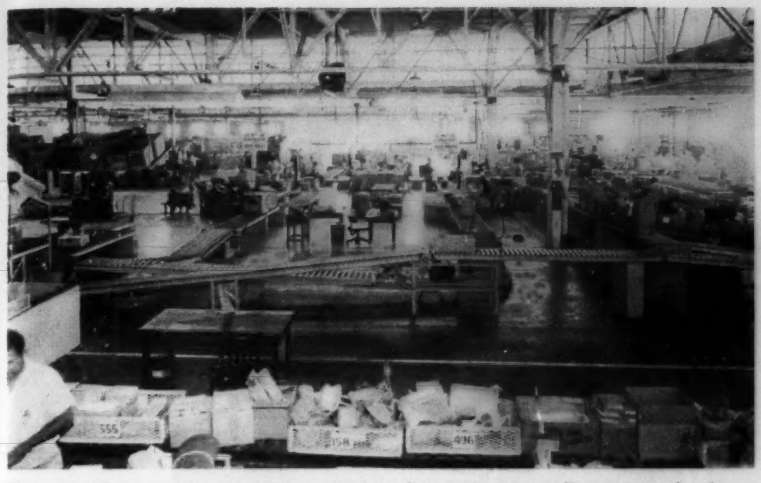
During transportation of supplies, the rollers are locked to provide a non-movable floor. When being loaded or unloaded, the floor "comes to life" and becomes part of the conveyor system.

Heavy-duty platform and shelf-type trucks accommodate most supplies

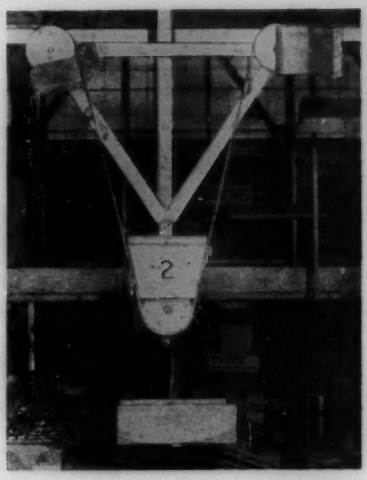
Weather protected overhead conveyor system between warehouses provides opening for traffic across roads. Right, truck enters warehouse via metal ramp







Network of conveyors processes outgoing shipments of small items in the foreground and bulky items in rear. Note the overhead carton shelf at upper left



Bicycle-type chain conveys shipping forms and drops them at exact stations

Two drag chains, located in spaces between the rows of conveyor rollers, mobilize the load. They are connected to an electric motor located above the vehicle's rear axle. Lugs on the chains engage the pallets and move them with ease.

When the crash truck conveyor delivers supplies to any of the mechanized areas, it usually backs up to a powered chain conveyor. The conveyor can be hydraulically adjusted to the height of the vehicle. It also contains an electric outlet for connection with the truck's electric motor.

Pallets are carried from the truck bed, up the inclined booster conveyor onto double lines of dead roller conveyor sections inside the building. The average time required to move 12 pallets loaded with material on or off a truck is 40 seconds. There are several of these double-conveyor lines extending through the receiving area, installed at work-level height and accommodating double rows of pallets.

To facilitate loading and unloading cargo carriers, conveyors are extended right into the vehicle—freight elevator, plane, rail car or truck. When practicable, conveyors extend from the carrier directly into the warehouse and onto the conveyor line.

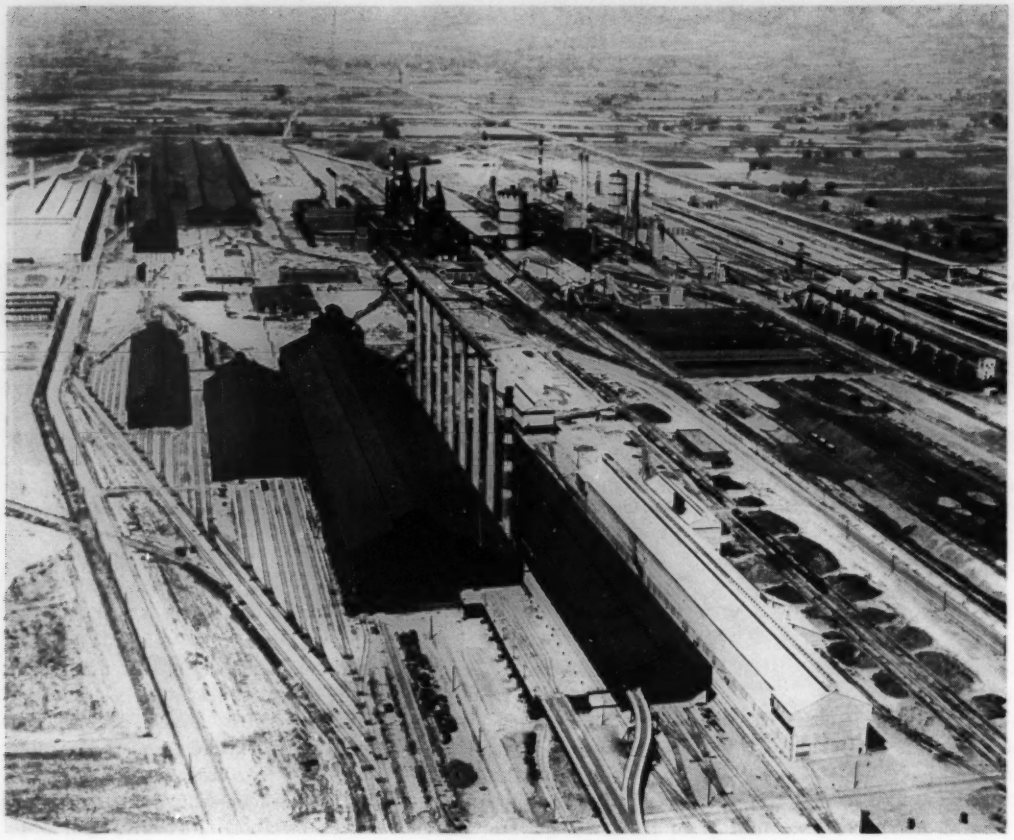
To unload aircraft, portable semi-powered telescoping conveyors are utilized, extending from the aircraft to a booster belt conveyor and into the air freight terminal onto a belt conveyor.

A Kelly-designed drum stacker can unload and stack drums at a height of 12 rows at a rate of 780

(*Please Turn to Page* 97)

Shipping crate is conveyed to nailing machine, one of three on base, which has saved about $26,000 annually

Kelly designed drum stacker conveys and stacks drums to a 12 row height at excellent speed of 750 per hour



Geneva Steel plant at Provo, Utah, was taken over by U. S. Steel during World War II at the request of the government, which feared that enemy attack on Panama Canal would cause a West Coast steel shortage

Plant Location—Key to

IT HAS been established that some 90 per cent of the cases of industrial failure can be traced to ill-advised location policies.

The choice of location for a manufacturing plant, sometimes called the curse of industrial success, is one of the most interesting but difficult problems in the entire management picture.

Lowering Costs

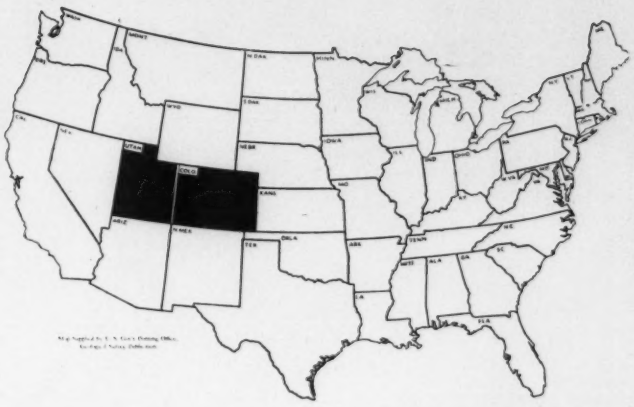
What governs the choice of location for manufacturing operations? The answer is that principle which is followed in all productive processes—the possibility of minimization of costs.

Factors influencing location are several. Two forces orient location in the majority of all cases. These two factors are markets and materials.

Industrial growth in the South and on the Pacific Coast may be attributed in good measure to the desire of manufacturers to get close to their markets. A location near the market lessens transportation costs on the finished product.

For materials the story is the same, that of minimizing transportation costs, this time on raw or semi-processed materials. If operations are established where many raw materials or semi-processed materials are utilized to make the finished product, in many instances a transport cost saving may be effected by locating close to the materials. The location of steel producing units close to sources of iron, coal, and limestone is a case in point.

Other orientating forces include cheap labor, low rental sites, lower power costs, and in relatively few cases, certain more or less non-economic forces such as climate,



Some 90 per cent of industrial failure can be traced to poor plant location. Postwar emphasis on the choice of a good industrial site is on markets and materials with transportation costs as the prime consideration

By John D. Garwood
Associate Professor of Economics
Kansas State College, Hays, Kan.

Industrial Success

attractive communities, personal relationships, etc.

It is likely, however, that where these forces channel location, the factors of markets and materials are of little import.

Transportation Costs

The influence of markets and materials is felt through the medium of transportation costs. If a good is a heavy bulky commodity obviously sound policy will indicate a short distance haul.

In the manufacture of beet sugar the processing plants are situated near the site of the beet producing operations. Sugar beets are heavy and bulky and, in addition, they have small value per pound.

The same is true for steel mills which seek locations where the heavy and relatively low cost raw materials needed to make steel may be hauled short distances. Steel fabrication units will usually attempt to locate near the source of their steel to shorten the haul.

The transfer charge for goods which are perishable, dangerous, fragile, bulky, or which require special treatment will be higher than goods which require a minimum amount of care. The value of the good is also a matter of consideration for rate purposes.

Goods of high value are usually subject to a higher transfer charge than goods of lower value of similar weight and difficulty of transport. Consequently, if the finished product is expensive to transport, a location close to the market may be a real cost saver.

Direction of Transfer

Direction of the transfer also may influence the size of the carrier rate. If the traffic flow is light in a particular direction the transfer cost quoted may be low in order to induce the utilization of the services of the carrier involved.

Besides the costs of moving the materials and finished products, the quality of the transportation service is a determinant of location policies. Speed of transport, dependability of the carrier, and the relationship between the production schedule and carrier schedule must be considered.

Western Study

In a study, made recently by the writer, of postwar industrial location of manufacturing firms in the states of Colorado and Utah, the problem of minimizing transportation costs for new firms in these states was the primary factor.

Material in the survey was secured through personal interviews with owners and managers of 116 new postwar firms. A good 90 per cent of all labor employed by new manufacturers in Utah and Colorado is employed in these 116 firms.

These two states have a total land area larger than the combined area of the New England states plus New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia. Yet their combined population is smaller that that of Connecticut.

A glance at a map will show that the two states are relatively isolated from large population centers.

On the west the Pacific Coast

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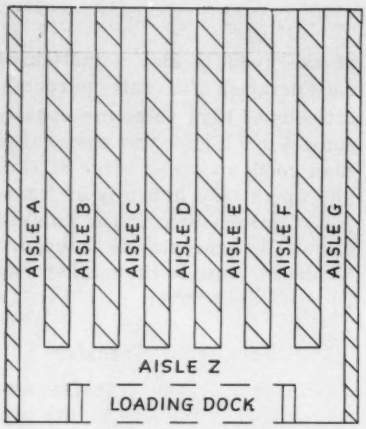

Fig. 1: Palletized drums are stored three high, one deep on 12-ft aisles

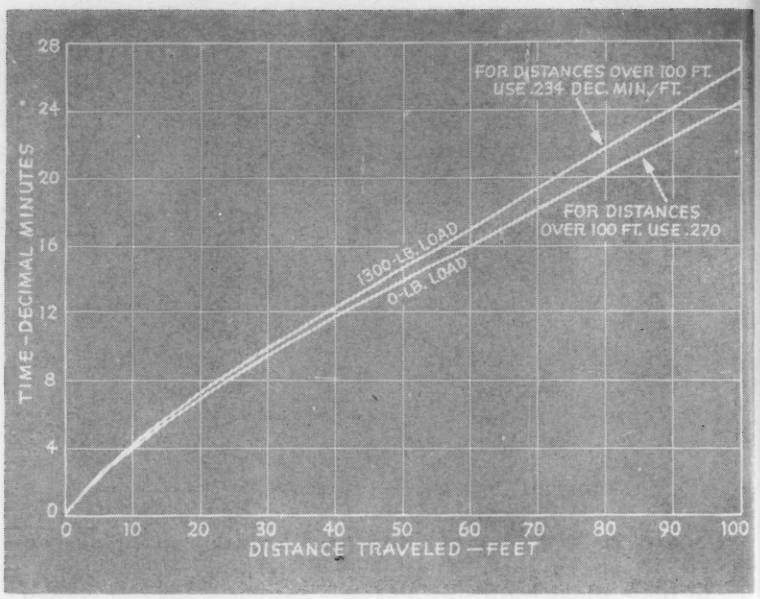

Fig. 2: Travel, distance vs. time. Time values were taken when battery conditions were average. Specific gravity of 1.210 was considered average. Since there is considerable difference between travel time loaded vs. unloaded, curve should be plotted for each weight load, or for varying weights in 500-lb increments. Trucks shown are battery powered, reach maximum speed after traveling 50 to 100 ft. For time values over 100 ft, a constant is used as shown on graph. Time value is determined from the straight line portion of the curve by dividing the differential in time by differential in distance

By David C. Prosser
Senior Methods and Standards Engineer
Minnesota Mining & Manufacturing Co.

Measuring Industrial Truck

Measuring work capacities of powered materials handling trucks raised truck utilization from 45 to 85 per cent in one month at Minnesota Mining and Manufacturing Co.

USE OF materials handling trucks coupled with palletization has produced tremendous cost reductions throughout industry. However, further substantial reductions are possible by perfecting operational methods and increasing work output of these machines.

Work Measurement

To accomplish this secondary saving, it is necessary to apply the tools of scientific management. The most important of these tools is a method of measuring work capacities.

Today, the only method of measuring work capacities of materials handling trucks is through the use of rated time studies, where the assumption is made that all operations of an industrial truck are controlled by the operator.

This assumption is erroneous. A powered materials handling truck is a machine, and as such it should be operated at its maximum capacity, or at a speed specified by management.

At Minnesota Mining we have applied the measurement for this purpose to a warehouse operation (see below). When the operation was first measured we were gaining only 45 per cent utilization. The trucks were idle 55 per cent of the day.

Through application of the measurement, factors causing low productivity were easily found and removed. Truck utilization was raised from 45 per cent to 85 per cent in one month.

I am going to describe a method of measuring work capacities based on this premise. Discussion will be restricted to powered fork trucks. The application, however, applies to all powered trucks.

In order for management to de-

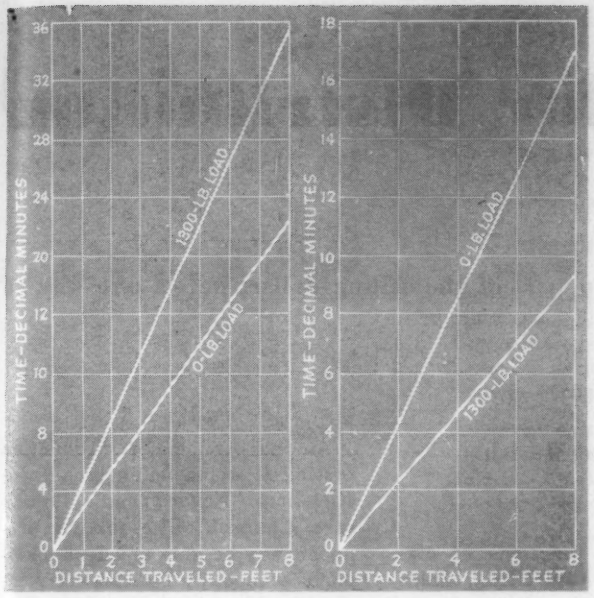

Fig. 3: Distance vs. time for lowering and raising forks. Graph for raising fork is on left, lowering on right. Graphs show that these two elements occur at a constant speed and are variable only by load when average battery condition is assumed. Thus, a single time per foot of travel can be used for lifting and lowering. The following values were found: Raise forks — 0 lb equals 2.8 dm/ft; 1300 lb equals 4.5 dm/ft. Lower—0 lb 2.1 dm/ft; 1300 lb equals 1.2 dm/ft.

OPERATION: Unload Palletized Drums From Trailer and Place in Stock

TRUCK TYPE: 4,000-lb.—32 Volt Battery

ELEMENTS	DISTANCE-FT.	LOAD-LBS.	NT/PALLET*
1. Travel loaded from stop, max speed, to storage	132	1300	34.0
a. Release accelerator, depress brake			
2. Brake to stop	10	1300	5.0
3. Raise pallet to proper level	6	1300	27.0
4. Creep into position to stock pallet	5	1300	6.4
a. Reach for, grasp, move lowering lever			
5. Lower pallet to stack	.5	1300	1.1
6. Reach for, grasp, move direction lever	..	..	1.2
7. Release brake	..	..	.4
8. Creep backwards, Y out grasp direction lever	11	0	10.8
9. Brake to stop	.5	0	0
10. Shift Direction Lever	..	..	.7
11. Release brake, depress accelerator	..	..	2.5
12. Travel empty from stop, max speed to dock	170	0	43.3
a. Lower forks to pick-up position			
b. Release accelerator, depress brake			
13. Brake to 2 mph	10	0	5.0
14. Coast across dock plate at 1 mph	5	0	5.7
15. Coast under pallet in trailer at 2 mph	7.5	0	4.3
a. Reach for, grasp lifting lever			
16. Brake to stop	.5	0	0
17. Raise pallet to carry position	.5	1300	2.3
18. Reach for grasp, move direction lever	..	..	1.9
19. Release brake, depress accelerator	..	..	2.5
20. Travel out of trailer at 2 mph	8.5	1300	4.8
21. Travel full speed from 2 mph max, Y off dock	28	1300	9.4
a. Release accelerator, depress brake			
b. Reach for, grasp direction lever			
22. Brake to stop, move direction lever	5	1300	2.5
23. Release brake, depress accelerator max	..	..	2.5
24. Check drums against receiving report	..	..	5.0
Total Normal Time/Pallet	..	..	178.3
Rest Allowance %	..	..	15
Rest Allowance/Pallet	..	..	26.7
Delay Allowance %	..	..	4.0
Delay Allowance/Pallet	..	..	7.1
Total Standard Time/Pallet (NT+RA+DA)	..	..	212.1

* All Time Values Shown In Decimal Minutes.

Performance

termine the method of operating a truck in a given operation, they must first determine safety hazards that will limit speeds. Based on these safety hazards the operation can be described in terms of the basic elements of operation.

There are six elements involved in the operation of a fork truck. They are: Travel, brake, raise fork, lower fork, tilt fork, manual operations.

To determine the time to perform an operation, it is only necessary to determine time required to perform the basic elements of the operation.

If management determines that the speed at which an element is to be performed is less than maximum, then no measurement is required because the time is set.

If management, however, specifies maximum speed or creep speed for an element, then the truck's capacity must be measured in order to determine time required to perform that element.

(*Please Turn to Page* 70)

OPERATION: Load Palletized Drums From Stock to Trailers

TRUCK TYPE: 4,000-lb. Hi-Lo Attachment—32 Volt Battery

ELEMENTS	DISTANCE-FT.	LOAD-LBS.	NT/PALLET*
1. Travel empty from stop, max speed, to storage	142	0	35.7
a. Position forks for insertion in pallet			
b. Release accelerator, depress brake			
2. Brake to 1 mph	10	0	5.0
3. Coast under pallet at creep speed	5	0	5.7
a. Reach for, grasp, move lift lever			
4. Brake to stop	.5	0	0
5. Raise pallet	.5	1300	2.3
6. Reach for, grasp, move tilt lever	..	..	1.2
7. Tilt pallet back full	..	1300	3.1
8. Reach for, grasp, move direction lever	..	..	1.9
9. Release brake	..	..	.4
10. Creep backwards, grasp direction lever	10	1300	8.6
11. Brake to stop	.5	1300	0
12. Lower pallet to carry level	.5	1300	4.7
13. Shift direction lever	..	..	.7
14. Release brake, depress accelerator max	..	..	2.5
15. Travel loaded from stop, max speed to dock	170	1300	45.4
a. Release accelerator, depress brake			
16. Brake to 2 mph	10	1300	5.0
17. Coast across dock plate at 1 mph	5	1300	5.7
18. Coast to position in trailer at 2 mph	7.5	1300	4.3
a. Reach for, grasp, move lowering lever			
19. Brake to stop	.5	1300	0
20. Lower pallet to trailer floor	.5	1300	.6
21. Reach for, grasp, move direction lever	..	..	1.9
22. Release brake, depress accelerator	..	..	2.5
23. Travel out of trailer at 2 mph	8.5	0	4.8
24. Travel empty from 2 mph max speed, Y off dock	28	0	9.0
a. Release accelerator, depress brake			
b. Reach for, grasp direction lever			
25. Brake to stop and move direction lever	5	0	2.1
26. Release brake, depress accelerator max	..	..	2.5
27. Check drums against order slip	..	..	6.5
Total NT/Pallet	..	..	162.1
Rest Allowance %	..	..	15
Rest Allowance/Pallet	..	..	24.3
Delay Allowance %	..	..	4.0
Delay Allowance/Pallet	..	..	6.5
Total Standard Time/Pallet (NT+RA+DA)	..	..	192.9

* All Time Values Shown In Decimal Minutes.

Function – Factor Distribution

Cost of distribution takes a large part of the selling dollar, here's one way to

By Fred Merish

COSTING of distribution is still in the development stage. The subject has been approached from many angles, but the well formulated rules, principles and procedures used in costing production are still to be perfected.

This is due to a large extent to these three reasons:

1. Management assumes that distribution costing is so complex that the problem is insoluble;
2. A distribution costing system will cost too much to maintain;
3. For 20 years business counselors, business executives and cost accountants have discussed the subject, but have done little about it.

Management does not promote sales today unless it knows what it costs to produce the products. With few exceptions, however, sales executives plan a sales campaign without the slightest knowledge of what it costs to distribute their wares.

There follows a general formula for costing distribution, based on techniques in use today.

Follows Process Costing

The costing of distribution follows the pattern of process costing in a plant. Using process costing, the aim is to cost the various processes required in the making of a product.

In distribution, the *function* parallels the *process* in production costing. All operations needed to complete a distribution function are costed. Costs of all functions needed to achieve a certain objective in distribution are totaled to arrive at its distribution cost.

The broader functions of distribution are advertising, sales promotion, direct selling, transportation, warehousing, materials handling, packing and shipping, credit, collections and financing. There are many sub-divisions depending on the business set-up.

Accounting For Distribution

The mechanics of accounting for the costing of distribution functions should follow the distribution methods adopted by management. Just as in production, cost accounts parallel plant operations.

An account should be maintained for each function set up, the natural-expense items recorded under each functional cost heading. Functional control accounts may be kept with subsidiary ledgers, which record a breakdown of total functional costs by object of outlay of expenditure, as shown in Chart 1.

In some cases, few functions may be costed and analyzed, in other cases, many. There is no set rule.

The greater the breakdown into small areas of functional performance, the better the cost control, the more valuable the information obtained, the greater the opportunity to effect savings.

How far you should go in costing distribution depends upon the need for the information, cost of obtaining the information and justification of that cost in the light of expected results.

An old axiom of production costing is worth using as a yardstick here. "Never spend a dime to save a nickel." The smaller producer may be able to effect maximum economies by costing only the broader functions of distribution. To cost to a greater degree may result in so much paperwork and expense that he loses money on the venture.

Unit of Measurement

Establishment of distribution functions to fit the management's distribution methods and its costing objective, and the allocation of expenses to these functions gives the cost of each function, or functional cost. But this is of limited use for distribution cost analysis.

It shows merely what each function costs, but there is insufficient breakdown to pin-point bad distribution practices. To cost distribution in greater detail, management needs a unit of measurment or functional unit.

For example, in packing and shipping, the functional unit would be the weight or number of shipping units processed during the costing period. The total cost of each function divided by the total number of units processed gives the unit cost for the function.

The formula is the number of functional units times the unit cost of the function gives the total cost of the function.

The measuring unit should be determined after considerable deliberation has been given to all operating factors. Management must determine the measuring units that best mirror distribution

Costing

find the actual cost

operations, the detail of which will differ with the business, as seen in Chart 2.

Unit Cost of Function

Once the measuring unit has been established and the cost of the function determined by charging all expenses serving it, you can arrive at the unit cost of the function.

This figure should be compared from period to period with standard functional unit costs that have been set up from a backlog of experience figures.

This comparative analysis enables a management to keep check on the trend of distribution costs and keep it in line with standards.

If management stopped here, it still would not have enough information to do a thorough job costing distribution. Knowing the trend on costs, either on production or on distribution, is better than not knowing it, but management cannot tell from a comparison of functional unit costs why, where or how the costs were high or low.

This is of much greater importance and usually these variances pertain to marketing methods. The comparative analysis of functional unit costs may stop some bad handling practices.

If this is the objective, costing may stop at this point. But, if a management wants to appraise its operations in the marketing zone, it must allocate the functional unit costs to four primary distribution factors—the product, territory, method of sale, customer.

Functional costs that apply to

(*Please Turn to Page* 62)

Chart 1

Classification of Expense In The Ten Major Functions of Distribution

How the natural-expense items are classified under each function. Functions and classifications of expense should mirror the distribution routine and will differ with the organization.

1—Storage (Building expense)
Maintenance and repairs
Taxes and insurance
Depreciation
Heat, light and power
Outside storage space

2—Inventory control
Taxes and insurance on stock
Salaries—stock clerks
Overhead—space, supplies, etc.

3—Order assembly
Salaries—warehouse labor
Overhead—space, equipment, supplies and supervision.

4—Packing and shipping
Material, labor, overhead.

5—Transportation
Express, truck, parcel post.

6—Selling
Salesmen salaries, bonuses, commissions, traveling expense.
Overhead—Salaries of sales executives, district and branch managers, sales employment and personnel, training, records, research, engineering service, space, equipment.

7—Advertising
Newspapers, magazines, posters, signs, agencies, art work, radio, displays, electros, movies.
Overhead—Salaries, advertising managers and assistants, space and equipment charges.

8—Order entry
Clerical salaries, space, supplies, equipment, supervision.

9—Billing
Clerical salaries, space, equipment, supplies and supervision.

10—Accounts receivable
Credit extension, collection, space, equipment, supplies, etc.

Chart 2

Measuring Unit for Charging Cost

When the functions have been set up, the expenses serving these functions classified as on Chart No. 1, the management needs a measuring unit in order to charge the primary factors in distribution, product, territory, customer and method of sale with their proper share of distribution cost. This is an example of how these functional units are set up. Each management must establish its own functional units depending upon its methods of distribution and operating procedures in handling and marketing.

Function	Functional unit
1—Storage	Number of standard units handled or time study
2—Inventory control	Weight, ton miles, number of shipping units
3—Order assembly	Weight, number and kind of shipping units
4—Packing and shipping	Time study, number of sales calls, number of salesmen, estimated cost per salesman.
5—Transportation	Cost of space or media used.
6—Selling	Number of invoice lines, number of orders.
7—Advertising	Number of invoices posted.
8—Order entry	Number of invoice lines
9—Billing	
10—Accounts receivable	

Floor space occupied
Number of invoice lines handled

Materials Handling—

What's Wrong With It?

George H. Bell
The J. L. Hudson Co.

Five large users declare "open season" on the manufacturers of materials handling equipment. Here are excerpts of their pertinent comments presented at recent Cleveland meeting of MHI

PART of our getting along with our customers is tied up in the appearance or the decor of our selling floors. In the past our management has had to issue instructions that trucks and other pieces of handling equipment could not be taken on a selling floor during store hours simply because their general appearance was poor. Better color treatment and changes in shape and styling are some of the things needed to help solve this part of the overall problem.

Much of the equipment that is being offered to the department store trade is over-engineered or much heavier than necessary. Obviously, the use of lighter metals and improved engineering design seems to be indicated.

The materials handling industry could benefit if they were to work more closely with progressive stores, with our trade associations, and other representative groups to find out what our particular problems are, and try to come up with recommendations in the form of new equipment or combinations of methods and equipment.

We would like to participate in development and testing work. We might be able to help you produce a better piece of equipment than the one that starts out on your drawing boards and then is suddenly announced as a panacea.

Contagious Purchasing

We have been guilty of poor judgment in another sense — of buying equipment simply because someone else bought it. Our top management takes a trip to a distant city and visits another store. The owner there tells him that they have five new pieces of some gadget or other, it is the finest thing yet — "You better have some."

Some of this contagious purchasing gets started because a few of your representatives were guilty of making pretty strong claims and started the cycle.

Fortunately for the industry, much of this kind of selling has stopped but in its place we frequently now have the ordinary order-taker who knows little about equipment and its application. You need more sales-engineers who have some background in materials handling.

This next point may seem picayune but it is very important. We try to plan our work-day by arranging appointments, scheduling meetings and interviews. Many representatives call on our store who drop in unannounced. As a result, they are disappointed when we are out; or sometimes they get upset if we don't break up our day just to stop and visit with them. Both parties could save time if these men would recognize and practice simple courtesy by asking for an appointment.

The several fine trade publications are doing a better job each day in providing us with information on new equipment and applications that solve some of our problems. You can supply us with more ideas that directly apply to department stores.

There is a very definite need for the standardization of materials handling terminology, particularly in our type of business because department store language is peculiar in many ways and must be clarified. •

George A. Smith
International Business Machines, Inc.

IN THE business machine field we make a highly specialized product. Hence, our plant does not fall into the same category as the automotive plants that have mass production. As a result of this type of manufacturing we are intensely interested in the following things:

Maneuverability—It is imperative that material handling equipment operate in effeciently laid out areas with no waste space. In such departments as drill press, milling machine, punch press and the like we now are using equipment that can and must maneuver between the machines and operate in 48-in. aisles. The overhead conveyor is being used more extensively to save space. This space problem is prevalent in stores and warehouse areas where in order to save space we are using equipment that has allowed us to reduce the width of our aisles from 120 in. to 80 in.

Standardization—We would like to see standards set up on controls, rated capacities, tires and wheels so that specifications and quotations can be compared on an equitable basis. Would it be possible for instance to take a lesson from the automobile industry wherein they have one or two companies who supply such items as axles, transmissions, wheels and many other items? Much of this type of manufacturing has standardized equipment, reduced costs and improved the spare parts situation.

Conveyor manufacturers could do much to standardize on specifications of roller conveyors to the extent at least within a customer's plant. This responsibility lies in the hands of the sales engineer on the job.

Maintenance—Some steps have been taken to improve equipment design so that maintenance can be performed with some degree of simplicity for which equipment manufacturers should receive credit. However there is still room for improvement. There are three types of maintenance that are to be considered. The first is straight lubrication and cleaning, the second is preventive maintenance and the third is the repair necessitated by breakdown. Also, the equipment salesman has an educational task. Many users still have to set up the proper preventive maintenance programs to protect their investment in handling equipment.

Operator's Comfort—Make sure that the seats and back rest are comfortable and that controls are so placed that they are accessible, lines of vision should not be obstructed, the proper height of conveyors are recommended and the proper or correct hoist is used.

Safety—We place emphasis on guards where a man can be pinched or possibly crush or shear a finger or hand. Guards are around wheels of heavy trucks and protect the employee's feet. Dead man controls, warning horns, and good brakes are a must. All wiring to controls and electrical connections and extensions are grounded.

We guard constantly against toxic fumes in handling equipment. Safety type hooks are used on all hoists and cranes and probably could be a standard item by manufacturer. All moving equipment is painted a specific bright color. Some attention has been given to safety by manufacturers of equipment, but more can be done.

Material Handling Sales Personnel—There are many calls between the request for a quotation and the placing of the order, but after the order is placed the calls stop—sometimes not even a follow up to give instructions on the use of the equipment or a check-up to determine if it arrived safely.

Another point to be stressed is the investigation by the salesman. The user will respect the salesman more if he is told properly what to purchase for a successful installation. •

R. W. Mallick
Westinghouse Electric Corp.

MANUFACTURERS of top running overhead cranes might do well to look over the more advanced design type of control features that improve the operating speeds, increase safety, reduce oscillation, and permit a feather touch inching control.

A vast market exists for mobile cranes. In this mobile age we are inclined to avoid fixed structure. However, many people in manufacturing industry look upon mobile cranes as a tool of the construction industry. By compacting their designs and taking advantage of more intensive application engineering, manufacturers of mobile cranes will find a whole new field opened up to them.

Conveyors

Conveyors have probably contributed more than any other handling device toward the development of low-cost mass production. Once again the publicity afforded trucks has eclipsed the virtues of the conveyors. There is a distinct need for both in industry, but to recapture its position the conveyor industry will have to turn towards automation and better advertising.

In my personal experience I have seen many worthy conveyor installations fail because of faulty drives, poor controls, poor engineering. Every one of these ills can be cured. The improvement in design of control devices made in the past ten years staggers the imagination.

Conveyor manufacturers still have a job to do to make their equipment more versatile, smoother operating, and more automatic in control. They must learn how to integrate the design of the conveyor system with material movements by crane, trucks, elevators,

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DA INDUSTRY SURVEY

TM's Functions Expanding Into Distribution Field

First postwar survey shows 8% of TM's have broadened responsibilities to include distribution management — 25% more do work but are not receiving DM recognition

WHAT IS the functional difference between a distribution manager and a traffic manager in industry? Does one have more authority than the other? How do they compare in numbers?

These are but a few questions that DA editors and many traffic managers have been asking for some time without positive answers. The answers have been obtained from the latest DA Industry survey.

DM Is New in Industry

The title distribution manager and the functions administered and controlled by that office—traffic, warehousing, packaging and materials handling—are comparatively new in industry. When World War II ended there were few such offices on organization charts — approximately .75 per cent, as near as DA surveys of that time could determine. Today there are 8 per cent.

Actually, there should be about 25 per cent more on record. The survey shows there are that many others who exercise the functions, but do not carry the title.

From data obtained, the distribution manager is on a higher executive level than the traffic manager. This is best exemplified by a breakdown of the various industries represented.

In the food industry 70 per cent of the distribution managers occupy key positions among top management; 30 per cent have limited voice in management.

Among TM's in the food industry, 47 per cent are on key management level, 6 per cent have no voice in management, while 47 per cent have limited voice.

An interesting point is that, while the distribution manager has the more important job, both he and the traffic manager have high top management recognition. Only 2 per cent of all DM's reporting have no voice in top management. Only 5 per cent of all TM's are without even partial representation at the top.

Traffic Manager Broadening

Thus, the study has confirmed the long-known but heretofore uncertified fact that the traffic manager's position in industry is broadening to encompass the complete distribution operation.

Certainly, no man is in a better position to evaluate packing and packaging; no man better realizes the high cost of slow and inefficient methods of loading and unloading transportation vehicles.

The same man is in an excellent position to control shipment and receipt of raw material to keep production moving—and to oversee its travel through the plant so that the finished product will not glut shipping platform or warehouse.

Also, by the use of public warehouses, he can eliminate unnecessary private warehousing so that more overhead space can be converted into a valuable, profit-producing production area.

The amazing thing is that our great manufacturing industries are just beginning to realize that distribution is a detail that cannot be handled by almost anybody in the sales or production departments. Sales, production and distribution are separate, though related, phases of industry.

Minority Are ICC Practitioners

This study also revealed that the number of ICC practitioners is small—less than 30 per cent.

A number of complaints against top management were made inferentially by the answers to the question, "Which of the following job titles comes closest to describing your TM?"

Such subordinate titles as chief rate clerk and chief shipping clerk were checked off by 6 per cent.

While most of these may be the result of a clash of personalities, every chief executive should determine if an overly aggressive and, perhaps, influential sales manager, purchasing agent or production manager has overextended his functions.

If the traffic manager is asleep at the switch and permits modern distribution techniques to pass him by, while he spends the day checking tariffs and tracing shipments, he should be given a hot foot—but not until the various other related department functions are studied carefully. •

DA QUICK CALCULATOR for materials handling

A HANDY CHART FOR FIGURING MATERIALS CONVEYED OR MATERIALS TO BE CONVEYED

By W. F. Schaphorst

In the conveying of materials we often want to know the number of cubic yards conveyed or to be conveyed. The chart at right answers such questions and eliminates the need for longhand figuring.

The example given determines the cubic yards in a batch of material to be conveyed that is 6 in. deep, 3 ft wide and 1,800 ft long.

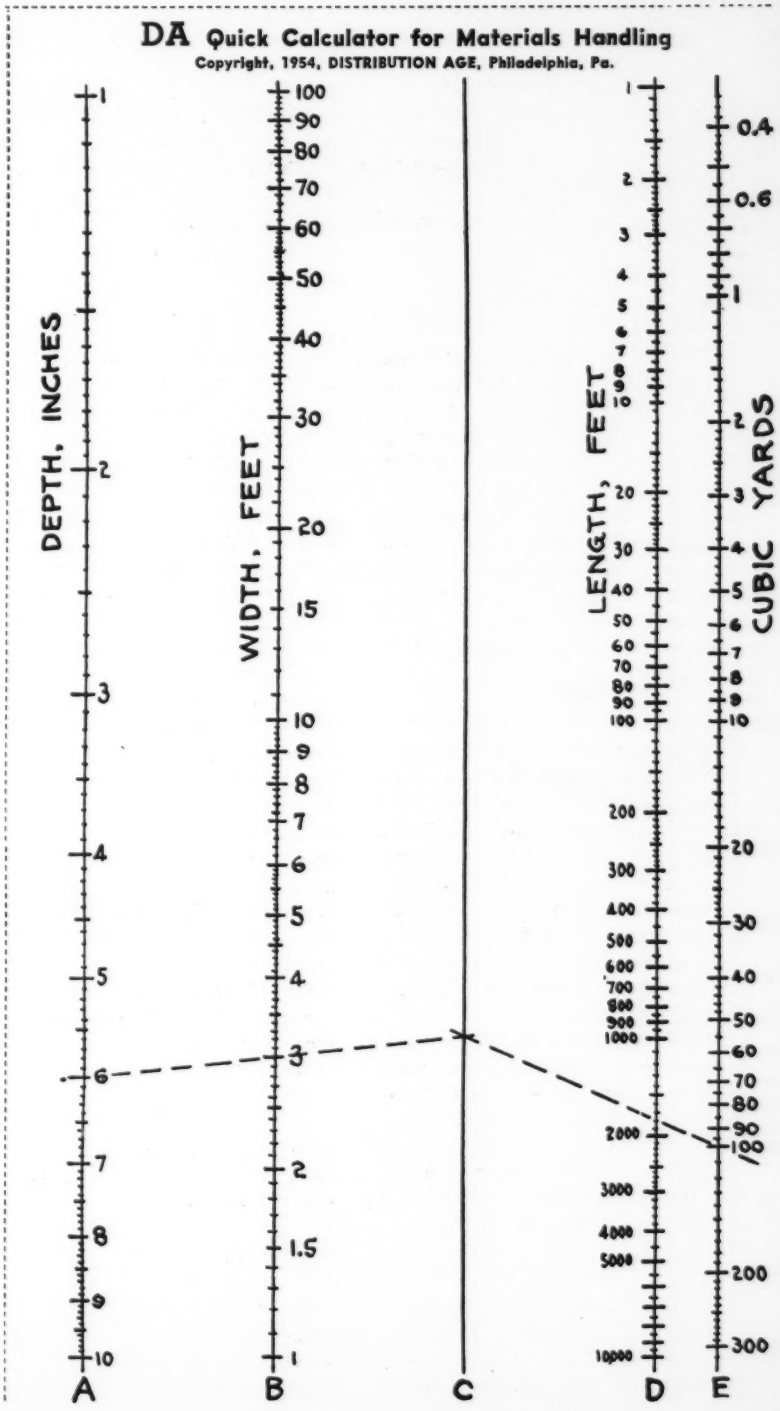
One line is run through the 6 in Column A and the 3 in Column B, locating the intersection in Column C. From this point of intersection, a line is run through 1,800 in Column D. The intersection with this line and Column E tells us that the answer is 100 cu yds.

The chart also takes care of depths deeper than that shown. For example, a depth in 60 in. instead of 6 in. would give the answer as 1,000 cu yds. When a digit is added to Column A it also must be added in Column E. The same is true with Columns B and E.

Hence, if the depth is 6 in., the width 300 ft and the length 1,000 ft, the Quick Calculator gives the answer as 10,000 cu yds. In this instance two digits were added in Columns B and E.

It is suggested that you do some experimenting with the Quick Calculator. Apply it to your own conveying problems. By keeping it in a convenient place and referring to it often, you should find it to be a valuable time saver.

Additional Quick Calculators will appear in future issues of DISTRIBUTION AGE.



Are YOUR Trucks Noise Offenders?

Exhaust noise is bad public relations for trucking. Operators, engineers and manufacturers cooperate to muffle noises offensive to the public's ears

FOR more than four years, the trucking industry, through the American Trucking Associations, Inc., has been searching for a solution to the noisy muffler problem. Adverse public opinion has led to the drafting of punitive legislation by various states. At the recent SAE National Transportation Meeting in Chicago, manufacturers, operators and engineers attempted to appraise this problem.

Causes

"Impatient drivers who persistently 'gun' their vehicles with resultant exhaust roar form the basis for much of the complaints registered. It has also become quite a habit for drivers, as well as operators, to knock out the baffle plates in a muffler on a mistaken supposition that increased horsepower at the road wheels would result.

"Poor driving techniques, operating with muffler equipment which has been worn, and allowing the exhaust line to become defective through poor maintenance are other causes," stated B. F. Jones, chief engineer, Autocar Division, The White Motor Co.

Measuring Noise

The volume of muffler noise which is objectionable to the human ear and how to accurately measure it is a major problem. "If instruments presently available are used in connection with a group of listeners forming a jury, the agreement between meter reading and jury judgment would coincide for only about 60 per cent of the tests," according to Mr. Jones.

A special meter having three channels or frequency bands driven by a single microphone would probably give more satisfactory results was the opinion of a 1950 report by the Traffic Noise Subcommittee of SAE's Truck and Bus Committee.

In early 1952, ATA called in Armour Research Foundation to help them. The objectives of the one year research program was to develop a practical method and commercial instrument to accurately measure exhaust noise; to obtain statistical data on variations of truck noise throughout the country and to correlate controlled laboratory noise measurements with road measurements.

Research Results

Research showed that the loudness of exhaust noise can be calculated with good accuracy when exhaust noise is sufficiently loud to override the noise due to other sources of the truck. A survey of Midwest and West Coast truck noise revealed that West Coast trucks average about 55 per cent louder than those of the Midwest.

"The best solution to the truck exhaust noise problem," said D. B. Callaway, Armour's supervisor of sound and vibration control, "does not lie in placing measurement equipment in the hands of law enforcement officials, but rather by the certification of mufflers for various types of trucks which have been tested by a qualified agency and found to meet an approved noise standard.

"This would allow simple legislation requiring that trucks operating on the highway be equipped with approved mufflers in good condition and would reduce the task of an enforcement official to that of examination of muffler for certification and condition."

Muffler Maker's View

"When you consider that the exhaust gas leaves the engine cylinder at something like 50 lb psi above atmosphere, and that this excess pressure must be reduced to say .00001 of 1 lb psi in order to keep it from being objectionable, and when you realized that this must be done without appreciable horsepower loss, you can understand some of the noise problems with which the muffler design engineer is confronted," said muffler manufacturer C. E. Nelson.

"So far, at least, no one has come up with a good way of silencing

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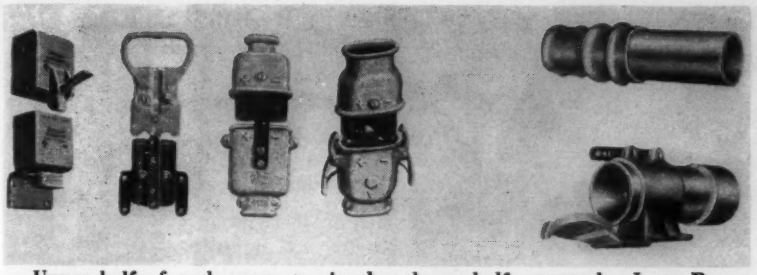
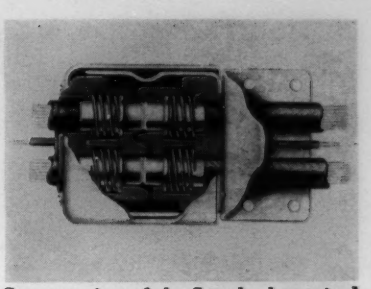
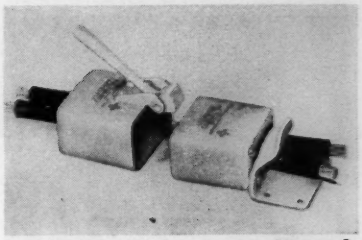


Upper half of each connector is plug, lower half receptacle. L. to R.: Standard, Yale & Towne, Russell & Stoll, Elwell-Parker, Anderson



Cutaway view of the Standard terminal connector with halves locked together

Although battery charging plugs and receptacles are of rugged design, they can be damaged. Here are a few tips on their care and maintenance



Standard terminal connector. Note pole marks on case. Locking half is at left

Check Points In Repairing Charging Plugs, Receptacles

BATTERY charging plugs and receptacles are made in several sizes in five or more types and are designed to be disconnected easily and quickly.

Although these devices are locked together as a unit in use or on charge, they consist of two separate parts—the plug (male half) and the receptacle (female half).

Charging equipment also has leads furnished with either a receptacle or a plug. Obviously, the purchaser of battery powered equipment must make certain that the same type and size of charging plugs and receptacles are supplied with the truck, battery and charger.

Although plugs and receptacles are of rugged design, they are not indestructible and can be damaged by misuse. Foreign material such as water, grease, oil, dirt, etc., in the receptacle will make it useless unless it is repaired.

In repairing a damaged or dirty plug or receptacle connected to a battery, the user must not forget that the leads which terminate in the receptacle are live or "hot" with the total voltage of the battery existing across the terminals.

Before removing the terminal lugs from the receptacle, the battery circuit must be opened or broken. If this is not done and the terminal lugs are accidentally touched together, a short circuit and arcing will occur.

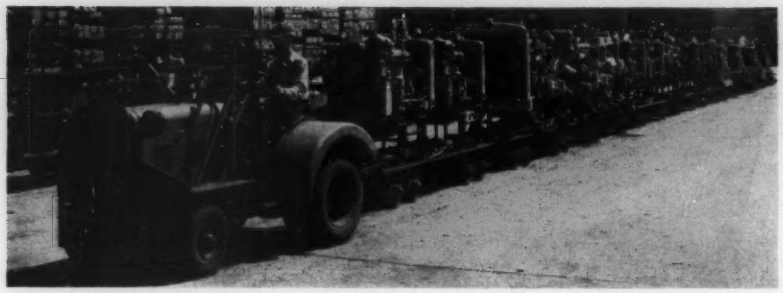
The amperage carried may reach 10,000 amperes and may exceed the current carrying capacity of the leads. The short circuit rate will equal three times the one-minute discharge rate of the battery.

To open the circuit, either disconnect one lead from the battery post or sever one of the cell connectors. The terminal lugs are held in the plug or receptacle by a bolt or screw, which, when loosened, will permit the lugs to be withdrawn.

After the broken or damaged terminal lug is severed from the cable, the proper length of wire to fit the terminal must be bared, cleaned and tinned. Some terminal lugs have short or shallow recesses into which the wire must be soldered. It is doubly important to clean and tin the wire.

In reassembling the terminal lugs back into the receptacle or plug, make sure that the negative wire is placed in the negative side and that the terminal on the positive lead is secured on the positive side.

Obviously, when changing or repairing plugs or receptacles connected to the charging equipment, the power should be shut off so that there is no voltage across the terminal lugs.•



Tractor train hauls trailer loads of power plants through outside storage area

By Hugh G. Jarman

Diesel Engine Plant 100% Mechanized

Four miles of convcyor lines, 1,400 cranes, two miles of overhead monorail and 1,200 industrial trucks do the job in this huge plant

"MECHANICAL handling" is being utilized to its fullest extent in the Caterpillar Diesel Engine Plant at Peoria, Ill.

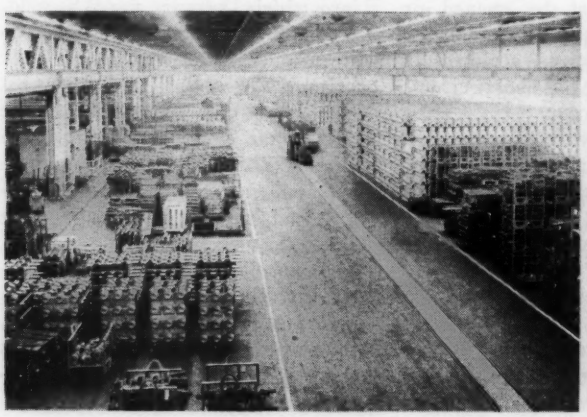
The building encloses an area of 925,000 sq ft within 757 by 1,120-ft dimensions.

On the engine assembly line, one man may work on 19 different engine models moving on a line.

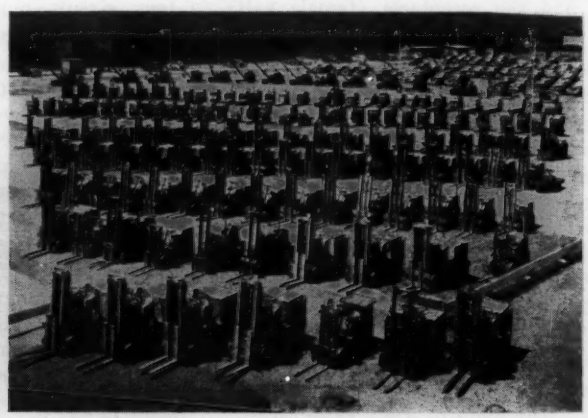
The assembly area consists of three assembly lines for basic engines, two for erection, testing, painting and shipping of industrial engines, a test room and large area for storage of finished parts.

All three basic engine assembly lines, running parallel, end in the same bay. Where a bridge crane is used to remove the engines to a set of gravity roller conveyors, engines are conveyed by a drag

Tractor train, note tracks, serving rough stores section



Part of Caterpillar's 1,200-unit industrial truck fleet



chain into the test room and stored pending test.

In the test room no man handles any component part of any one of their various types and sizes of engines. An overhead hoist is used for parts weighing over 10 lb.

Gravity Conveyors

Rough castings or component parts start on their way from storage by means of power or gravity roller conveyors. Material is brought to the conveyor system head by a lift truck.

The main line conveyor system runs through the center of the plant and switches off into the maze of machine tools into the three different machining bays.

Here, again, roller conveyor switchovers run into the front or operator of each machine tool, the conveyor ending exactly at the feed end of his machine.

The operator simply slides the part off the conveyor end onto the machine table. At the opposite end of this table, the machined part is pushed back onto the conveyor, which carries it on to the next machine operation.

The inspection bench consists of a series of steel plates which slide along two channel irons. They are fixed by means of a welded bracket on the bottom of each individual plate to a moving link chain by means of a steel pin.

As this moving table reaches the end of the inspection bench, the part has already been inspected and stamped. If accepted it enters one conveyor line, if rejected it is switched to another line to the scrap or reclamation department.

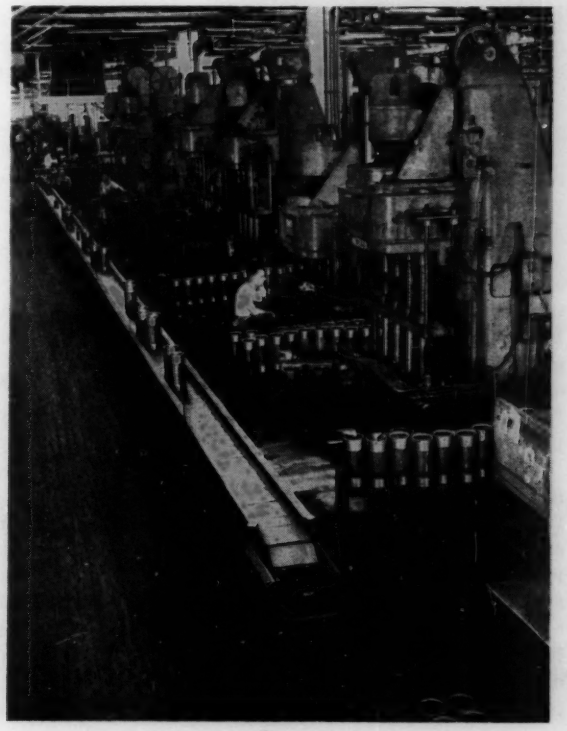
Accepted parts run in a continuous stream to one of three assembly lines. All component parts conveyors merge onto these three main lines and parts are picked off by each man as it meets his station.

The man remains stationary, as the assembly line upon which the engine is being assembled actually moves in front of him. The engine remains within his reach only for a sufficient length of time for him to do his work easily and carefully.

(*Please Turn to Page* 58)

Gravity roller conveyor serves camshaft turning machines

Power conveyor carries cylinder liners to boring machines



In-floor plate conveyor moves engines through assembly

1953

Handling Evolution Reflects Industry Progress

In his annual report to industry, Material Handling Institute president calls 1953 a year of 'Evolution in Handling'—points to increased shipments, more widespread recognition, and mergers

By Howard M. Palmer
Retiring President
Material Handling Institute

DURING 1953, shipments of materials handling equipment increased over 1952, top management gave handling more consideration, several mergers of equipment companies were announced and the shortage of trained manpower at all levels was a problem to both manufacturers and users, although the several MHI activities are directed toward solution.

One for Eight

The industry's volume has reached $1¼ billion worth of material handling equipment which has reduced the costs of and made possible the more efficient production of $108 billion worth of manufactured goods plus the warehousing and distribution of these goods. This represents about $1 of materials handling equipment for each $100 of manufactured products.

Materials handling has assumed a larger role in progressive industries. It has branched out into entirely new fields such as restaurants, super markets, department stores and hotels.

Top management is changing its attitude toward materials handling because it now realizes the increased production and lowered costs that can be obtained by overall integration. Only a few years ago, materials handling was the part-time responsibility of a busy production superintendent with limited access to top management.

More and more, now we find the materials handling function being exercised by a vice president with a voice in top management decisions with full power and responsibility to integrate materials handling with accounting, purchasing, warehousing, plant layout, tool design and maintenance.

Trend to Mergers

A trend toward mergers of materials handling equipment manufacturers characterized 1953. A manufacturer of electric trucks for inside work expanded their line to include gasoline powered vehicles and acquired another company to offer equipment for outside handling.

Another industrial truck maker bought out a manufacturer of straddle-type equipment and a power shovel company. A conveyor manufacturer purchased a gasoline fork-lift truck company. Many other companies in the industry expanded production by building new plants or adding to existing ones.

Exposition Review

One of the outstanding industrial events of 1953 was the 5th National Materials Handling Exposition sponsored by the MHI. Held in Philadelphia this year, the Exposition was the largest industrial exhibition of 1953 with more than 300 exhibitors occupying 170,126 sq ft of space. During the 5-day Show, more than 20,000 persons attended.

Following the Exposition, Walter E. Schirmer was appointed chairman of the Exposition Committee. Meetings were held with large groups of exhibitors and plans formulated for future Shows. A questionnaire was circulated to all exhibiting members requesting information on the needs of each company on future planning. Based on questionnaire results, the next Materials Handling Exposition is contemplated for 1956 (see Page 12).

Leasing and renting of mate-

(*Please Turn to Page* 59)

Our Highway Muddle Needs Mending—Now

By **Walter F. Mullady,** *Past Chairman of the Board, American Trucking Associations, Inc.*

54½ million vehicles jam our inadequate highways daily—this authority's plan may be the answer

WE ARE face to face with a highway crisis that is adding to the woes of the shipper and restricting the flow of all motor vehicle traffic. Our highways simply have failed to keep pace with the increase in numbers and in use of motor vehicles.

America's highways were overcrowded in 1940 when we had only 32 million cars, trucks and buses. Today, we're trying to jam 54½ million vehicles onto a network of highways that was neglected throughout World War II, and that has not kept pace with the industrial growth since the war.

Highway Prospects

A prediction by the U. S. Bureau of Census says that our population will increase from the present 160 million to about 200 million by 1970.

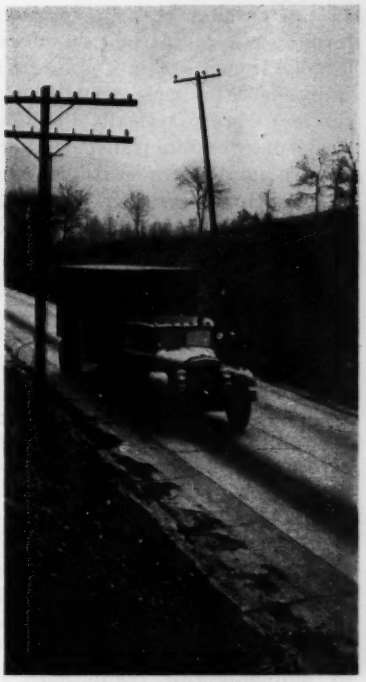
A tremendous industrial expansion will be necessary to take care of the needs of these extra 40 million Americans. We'll have to produce—and transport—at least 25 per cent more of everything that we eat, use and wear.

Also, the President's Materials Policy Committee found that our gross national production will increase from last year's figure of $360 billion to a total of $625 billion by 1975.

The Committee also estimated that by 1975 we will have 65 million passenger cars and 20 million trucks in use. That's 85 million motor vehicles compared with 54½ million on the roads today, and only 20 million in 1925.

Latest data available show that intercity for-hire truck tonnage for the third quarter of last year set a new record with an increase of 11.5 per cent above the volume transported in the same period of 1952. This came on top of a first quarter increase over last year's first quarter and brought the ATA truck loading index to an all-time high of 261, using 1941 as a base of 100.

Today's 54½ million motor vehicles are not using the roads primarily for pleasure jaunts. Those vehicles are all on the roads because some American enterprise or some American citizen needs transportation—by car, by bus or by truck—for sound economic reasons. The 85 million motor vehicles predicted for 1975 will be using our roads only because a demand for their service exists.



Inadequate U. S. highways, shown, are deterring cargo industry growth

Project Adequate Roads

The problem clearly is a mutual one for industry and transportation. For the shipper and the carrier, working together for their common welfare. An organization

(*Please turn to Page* 61)

By John H. Frederick
DA Transportation Consultant

Relaxing Federal Rate

Congress will consider three chief proposals for modification of

MANY transportation people believe that the time is ripe to bring about the much discussed relaxation of federal controls over interstate rates.

Those urging relaxation do so on the grounds that the present form of rate regulation is derived largely from restraints placed on railroads at a time when those carriers were practically the sole means of interstate transportation.

It is pointed out that the rise and continued growth of other forms of transportation, and the development of intensive competition have outmoded the present rate control structure.

Specifically, it is argued that with competition as it is today, the probability of unreasonably high rates is reduced to a point where the admitted disadvantages of any regulation tip the scales against the regulation of maximum rates.

In order that this new competition between different forms of transportation may be as vigorous and effective a regulator of rates as possible (within the limits set by minimum rate regulation), it is urged that regulatory processes which impede expeditious changes in rates should be repealed or modified.

Three Chief Proposals

There are three chief proposals for relaxing federal rate control. Legislation embracing these proposals is sure to be considered in this session of Congress.

One proposal calls for expediting decisions in proceedings involving general rate increases for railroads and common motor and water carriers. Decisions could be expedited by fixing a time limit of 30 to 60 days for initial Commission action in such cases, and by limiting the issues to be considered by it during that time.

The inability of carriers to increase their revenues sufficiently to offset fully the increases in operating costs, over which they have little if any control, has been increasingly evident. The primary reasons for seeking rate boosts are increases in wages and in the cost of materials and supplies.

More and more the gap between income and expenses has been caused not only by the failure of the ICC to authorize the full measure of rate increase requested but, also, because of the lapse of time between when increased costs take place and the effective date of increased rates.

Speed-Up Needed

Since 1946, rapid advances in costs and the consequent necessity for numerous advances in rates, each of which has taken place only after delay, have greatly increased the importance of finding some means of speeding up regulatory action.

If regulation of maximum rates is to persist, then, where increases in the cost of doing business are the reason for a requested increase in rates, it is clearly in the public interest that the regulatory machine should be so geared as to permit carriers to take the necessary steps to meet these increases in cost with as little delay as possible.

The accompanying table presents a record of the delay in the postwar proceedings under the regulatory processes as they now exist. It is evident that such delay has had very serious effects in the past and that it may well be intolerable in the future.

Section 15a

Another proposal suggests that Section 15a, known as the rule of rate making applicable to railroads and other carriers subject to Part I of the Interstate Commerce Act, be modified. It is suggested that language be added to the declaration of National Transportation Policy, in the preamble to the present Act, emphasizing the intention of Congress to permit the maintenance of carrier credit and the attraction of equity capital.

Such a suggestion appears sound as the rule never has really served one of its principal purposes, which was to assure a financially healthy railroad system. The original form of Section 15a provided for a specific fair return on railroad property and recapture of excess earnings. This was repealed in 1933 in favor of what was thought to be a more flexible standard.

Both the language and history of Section 15a indicate that it constitutes statutory authority and even a directive to the Commission to participate actively in the making of carrier pricing policy, an unnecessary assumption of managerial responsibility under present competitive conditions.

As things have worked out, instead of serving as the statutory basis for maximum rate regulation, the rate-making rule has

Controls

outmoded rate controls

been used primarily by the Commission to reduce carriers' requested increases in rates.

There would not be so much objection to such Commission actions if these reductions had been squarely based on a finding that the new rates would be unreasonable to the shippers; paying them, instead of on the Commission belief that the increases proposed would reduce the volume of traffic by diverting business to other forms of transportation and, hence, would not bring the additional revenue estimated by the carriers.

Carriers have felt that this is something they are better able to determine than the Commission.

Commission vs. Carrier

Sometimes, too, the Commission has taken a more optimistic attitude than the carriers towards future business prospects. Because of this it is concluded that financial need for the entire increase requested has not been demonstrated.

Many feel today that regulation should allow sound financial conditions to exist to the full extent that control to prevent unreasonably high or discriminatory charges to shippers will permit, but should not take an active hand in determining the methods as to how such conditions are to be attained.

Even repeal of Section 15a would not remove any power from the Commission to prevent the establishment of unreasonably high rates. The "just and reasonable" standard of Section I of the Act will protect against such rates, whether they are rates which would unduly enrich the carriers or unreasonably high rates which result from inefficiency on the part of the carriers.

In applying the "just and reasonable" standard the Commission will be guided by the declaration of policy and not by a rate-making rule, which up to now it has considered as authority for substituting its judgment for that of carrier management.

So long as the Commission retains what it considers to be specific authority to determine what level of rates will attract

(*Please Turn to Page* 60)

GENERAL RAILROAD FREIGHT RATE INCREASE CASES SINCE 1946 *

Amounts of Increase Requested and Date of Filing of Railroad Petitions	Amounts of Increase Granted and Date of Granting	Lapse of Time Between Filing of Original Petitions and Granting of Increases
Ex Parte 162		
Petition 4/15/46 25% Request that increases be made effective as of 5/15/46 prior to the hearing.	*Interim Increase* 6/20/46 11% Eastern Territory. 6% Southern and Western Territory.	2 months
	Final Increase 12/5/46 20% 25% in Eastern Territory in rates on manufactured and miscellaneous products and in class and l.c.l. rates.	8 months
Ex Parte 166		
Petition 7/3/47 25% Eastern Territory. 15% Southern and Western Territory		
Amended 9/5/47 38% Eastern Territory. 28% Southern and Western Territory. Request on 9/9/47 for an immediate 10% increase prior to the hearing.	*First Interim Increase* 10/6/47 10%	3 months (one month after the railroad request for a temporary increase.)
	Second Interim Increase 12/29/47 20%	6 months
Amended 12/3/47 41% Eastern Territory. 31% Southern and Western Territory.	*Third Interim Increase* 4/13/48 30% Eastern Territory. 25% Southern Territory and Zone 1 of Western Territory. 20% Western Territory other than Zone 1.	9 months (7 months after the first amendment to the petition.)
	Final Increase 7/27/48 No further general increase. Adjustments in specific rates.	13 months
Ex Parte 168		
Petition 10/1/48 8%		
Amended 10/12/48 13% Request 8% immediate increase prior to the hearing.	*Interim Increase* 12/29/48 6% Eastern and Southern Territory. 5% Zone 1 of Western Territory. 4% Western Territory other than Zone 1.	3 months
	Final Increase 8/2/49 10% Eastern and Southern Territory. 9% Zone 1 of Western Territory. 8% Western Territory other than Zone 1.	10 months
Ex Parte 175		
Petition 1/16/51 6% Request on 1/19/51 6% immediate increase prior to the hearing.	*Interim Increase* 3/12/51 4% Eastern Territory. 2% Southern and Western Territory.	2 months
Amended 3/28/51 15%	*Second Increase* 8/2/51 9% Eastern Territory. 6% Southern and Western Territory.	7 months (4 months after the amendment to the petition.)
Petition for Reconsideration 10/19/51 15%	*Final Increase* 4/11/52 15%	15 months (6 months after the petition for reconsideration.)

***Table Compiled by Transportation Association of America**

Renegotiations Round-Up

FREE COPIES

Because of space limitations it is impossible to present in this article all of the important changes made in renegotiations regulations in recent months.

The author, however, has kindly supplied DISTRIBUTION AGE with a limited number of his latest monthly bulletins. Interested persons can obtain copies by writing the editor. In writing for your copy, please use a company letterhead.

It took some important changes in renegotiations regulations to iron out working procedures. Keeping abreast of these changes can save you money

By Kenneth G. Smith
President
Kenneth G. Smith & Associates

THE National Renegotiations Board and its Regional Boards have now completed a sufficient number of cases to establish a renegotiations pattern. Indications are that procedures have been ironed out to the point where all assignments are being efficiently processed.

Experiences of the Board are reflected in certain changes made during the past few months in the regulations. Some of the more important changes are outlined in this report to DA readers.

Although the Act was scheduled to expire Dec. 31 (DA, Jan., '53, Page 28), it was evident at this writing that it would be extended, with modifications on business handled.

Segregation of Sales

The various Regional Boards are anxious to eliminate any sales which do not have a national defense end use. They have devoted a great deal of time to a thorough analysis of the segregation of sales submitted by contractors.

A frank discussion with panel members assigned your company may be beneficial. A number of firms have received special rulings to clear up unusual situations. A great many companies manufacture products not listed in Bulletin F, issued by the Bureau of Internal Revenue and use the depreciation for a similar product.

This may be working a hardship for your company by accepting depreciation on a similar product when calculating those sales that come under new durable productive equipment. A little research on the product may demonstrate its true natural light; and when this information is submitted to the panel members for a special ruling the results will be of assistance in preparing segregation.

In recent rulings companies have received from 25 to 40 years on products which they have manufactured, where they have been able to demonstrate, as in one case known existence for over 35 years the actual use for the same piece of equipment. Another client has benefited through the study of the use of its equipment, and segregates those that were on production lines and those used for testing and laboratory equipment which were exempt from renegotiation. There are many fine distinctions which experts have been able to find in the Regulations as issued by the Board when preparing a segregation of sales.

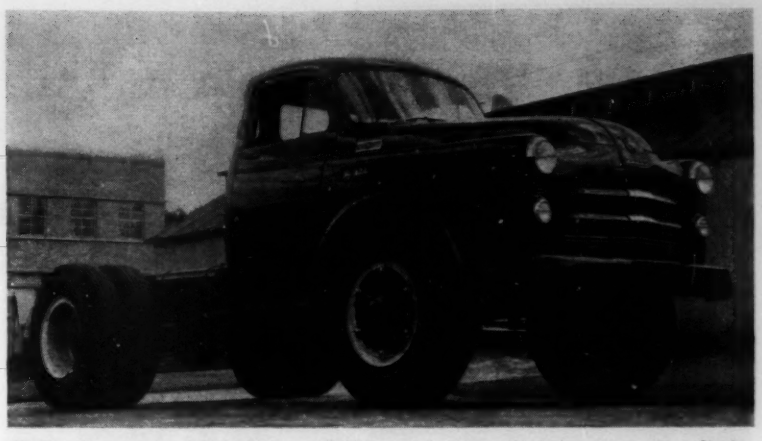
Durable Productive Equipment

Purchasers of durable productive equipment in the latter part of 1953 may not be able to give you a complete analysis of the use of their equipment for some time after the purchase. This means that your sales may be under or overstated as far as renegotiation is concerned. It is very important that serious study be made of sales in this category for the latter part of 1953.

Your segregation may also be affected by proposed amendments to the Renegotiation Act which may not be settled until March or April of 1954. Should you file your RB1 prior to the revision of the Act, advise the Board that you reserve the right to revise your segregation at a later date.

(*Please Turn to Page* 63)

Loading height has been reduced to less than 24 in. on some C-1 models



Hydraulic power steering is available on the new high tonnage six-cylinder 171-hp Dodge Y and YX models which develop 343 lb-ft of torque at 1500 rpm

Dodge Offers V-8 Engine In New C-1 Series

Power steering on some models, more compact tractors, improved steering linkage, wider front treads, also among 75 new features

NEW V-8 engines are among the seven power plants in the new C-1 Series of Dodge trucks.

The new V-8 engines, power steering, more compact tractors, an improved steering linkage, wider front treads, new frames, increased visibility, lower loading height and better road stability are included in the more than 75 new features in the trucks.

The new C-1 trucks offer seven engines ranging from 100 to 172 gross hp, gross vehicle weights ranging from 4,250 to 40,000 lb, and gross combination weights ranging up to 60,000 lb.

V-8 power plants are offered in three horsepower ratings in the new C-1 Series. They include 133 hp in 1½, 2 and 2½-ton models; 153 hp in 2¾-ton models, and 172 hp in 3 and 3½-ton models.

Numerous improvements also have been made in the six-cylinder engines which supply power for models ranging from the low-tonnage 100-hp B and C models to the high-tonnage 171-hp Y and YX models which develop 343 lb-ft of torque at 1500 rpm. A hydraulic power steering unit is available for the latter models in the new series.

Tractor-trailer operators will benefit from the more compact tractors which permit the use of longer trailers while still meeting legal limits on combined tractor-trailer lengths.

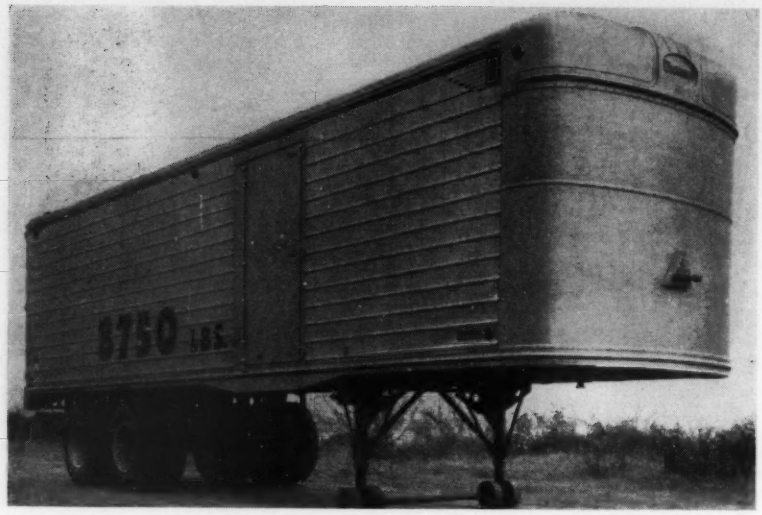
New conventional tractors are only 102 in. long from front bumper to back of cab, thus permitting use of standard 35-ft trailers to meet 45-ft over-all legal length limits in every state. COE tractors are compacted to 81 in.

Circle 1 on Card Facing Page 51

Wider front treads and unique new frames, which curve in at the front wheels to create a recess for the steering gear and increase the clearance between the front wheels and frame, provide stability and greater maneuverability.

The new trucks have a steering gear-before-axle linkage which insulates the steering column and steering wheel from road shocks with the aid of rear shackling.

Lower loading heights and larger running boards have been built into the new trucks. Total glass area of the C-1 cab has been increased more than 20 per cent. The new one-piece curved windshield has 951 sq in. of glass area. Shoulder area in the new cab has been increased more than four inches to nearly 62 in. •



New "Champion" dry freight van, a 32-ft tandem model, weighs only 8,750 lbs. New design increases strength, reduces excess weight to minimum

Dorsey Introduces New Lightweight Tandem Trailers

Lightest model in new series weighs only 8,750 lb, plastic cap standard equipment

DORSEY introduces this month the "Champion," a series of new lightweight 32-ft tandem trailers. The lightest in the series is a dry freight van weighing only 8,750 lb completely equipped. Two additional models of the same size are produce vans and refrigerator vans weighing 9,500 and 10,500 lb, respectively.

The new models are not of the all-aluminum frameless van type, but combine the stressed sheet sides principle of frameless vans with the principle of steel X-bracing, which is stronger than older, heavier Dorsey models.

Included as standard equipment is a new impact-resistant plastic roof cap, lighter in weight than steel, which Dorsey claims will not rust, corrode or in any other way wear from exposure. It has an impact resistance four or five times as great as aluminum or steel ordinarily used in trailers, Dorsey engineers report. Unless the blow is heavy enough to pierce the cap, it will not make a dent, as will blows on metal caps.

Should the roof cap be punctured, however, repairs can be easily made by the driver from outside the trailer, eliminating the necessity of removing the roof cap and unloading the vehicle. Repaired places are undetectable in appearance, strength and closure.

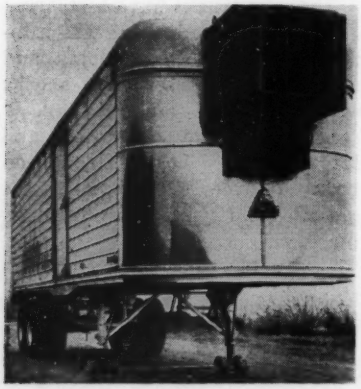
By leaving some of the upper portion of the translucent surface unpainted, light is permitted to reach inside the front section.

New Riveting Process

A completely new type and method of trailer riveting, developed in England for aircraft production, also is used in the new models. The new "Pop" rivets leave no hole as is the case with some other types of rivets and can be set by a single workman from the outside.

They have at least twice the holding power of those used in earlier trailers, Dorsey engineers learned. The new design calls for new standards of rivet spacing. A minimum of at least twice as many rivets are used in "Champion" model Dorseys. •

New refrigeration van weighs only 10,500 lb and has a 3-in. insulation

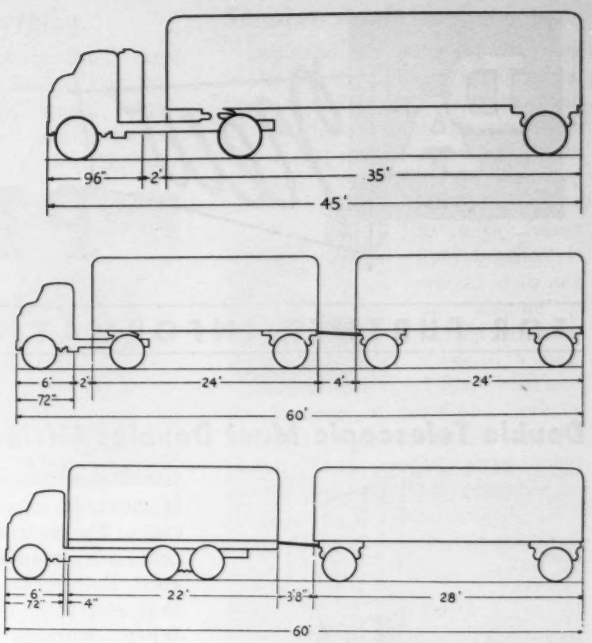


New plastic roof cap impact resistant, unpainted section permits light entry

Circle 2 on Card Facing Page 51

GMC Announces New COE Series In 54 Truck Line

Hydra-Matic included in medium and heavy units, silent muffler is offered



GMC Truck's new cab-over-engine design, with bumper-to-back of cab dimensions of 72 in. permits these combinations

HYDRA-MATIC drive for medium and heavy-duty trucks and tractors, and a new series of shortened cab-over-engine tractors are among the most important features in the new, 1954 GMC truck line.

Other improvements include a 125-hp engine in the light, six-cylinder GMC's, power steering, and the new silent power muffler.

Hydra-Matic was harnessed to trucks to four and one-half tons. Automatically providing eight forward speeds, the new transmission teams four-speed truck-type Hydra-Matic with a new two-speed auxiliary gear box. It is offered on trucks through the 470-30 series to handle gross combination weights up to 45,000 lb.

Bumper-to-back-of-cab length on the five new heavy-duty GMC COE's now is only 72 in., a reduction of 10 in. on present models. This design was achieved by using a flush radiator grille and squaring off the back of the cab.

Circle 3 on Card Facing Page 51

Heavy-duty models affected are F630-42, DF660-47, and F660-50, all being four-wheelers, and the following six-wheelers which are new models in the GMC line, FW620-42 and DFW620-47.

The 248-cu in. engine is to be standard equipment on all models 100 through 250. It succeeds the 228 engine and boosts the light line to 125 hp. Offered as an option is an "economy" 248 engine achieved by a carburetor change which gives greater gas mileage while developing 115 hp. •

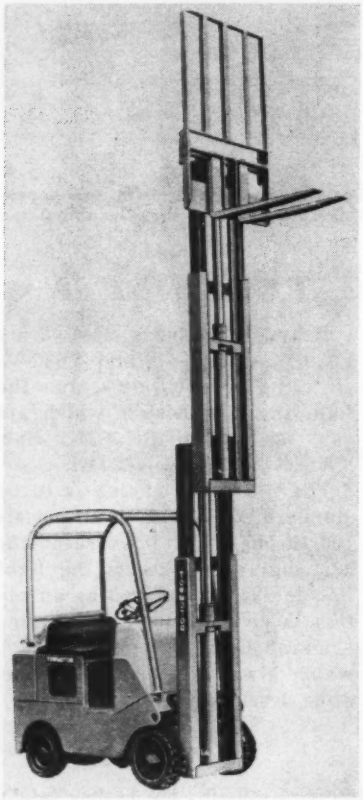
Hinged doors provide easy accessibility

Pick-up has 125 hp, body design gives increased capacity, low loading height

DA New PRODUCTS

FOR FURTHER INFORMATION USE READERS' SERVICE

Double Telescopic Mast Doubles Lifting Height



Latest Towmotor development is this double telescopic mast which enables same truck to be used both for high-stacking or working in low head-room areas. Mast combinations provide total lift heights from 144-216 in. with minimum height ranging from 65-83 in. for different masts. This device eliminates the need of a second truck and saves the time necessary for transferring loads from one to the other.

The mast consists of two short masts, the first mounted in conventional position, while the second is mounted in place of the carriage. The carriage and forks, in turn, are mounted on the second mast. Both masts may be operated independently or simultaneously. When working in low-ceiling areas, the forks are raised or lowered with both masts down. But for high stacking, the second mast is raised by the first, thereby adding the lift height of one to that of the other.

Circle 4 on Card Facing Page 51

Self-Adjusting Dock

Perma-Docks, a dock board unit combining the strength and lightness of magnesium, has been introduced by Magline Inc. Easily raised and lowered by one man, the unit is specifically designed

for permanent installation on concrete docks. No powered devices or counterbalances are required. It self-adjusts to truck level and automatically compensates for truck spring deflection.

Circle 5 on Card Facing Page 51

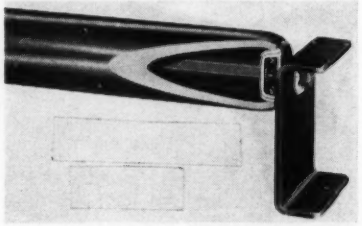
Double Row Racks

Equipment Manufacturing, Inc., has designed double row racks that double the load without increasing the rack size proportionately. Rack construction is of heavy gage square steel tube with all welded joints. Nesting caps are welded on the feet to facilitate stacking unit loads by lift truck. Longitudinal dividers of wood or steel, forming a "V," can be included to hold the pieces in place and prevent rolling or shifting.

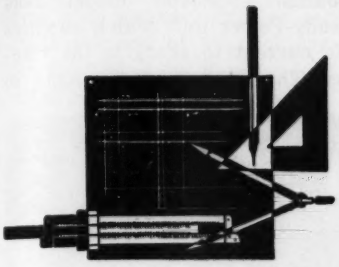
Circle 6 on Card Facing Page 51

High Capacity Conveyor

A new line of Rapistan roller conveyors designed for permanent installation where equipment must stand up under heavy or impact loads is announced by Rapids-Standard Co. Called the 1.9 Series, the line offers a choice of 154 new straight section models and 38 curves for handling many kinds



of materials in all types of industry. The new series is offered in 11 regular widths from 12-51 in. with choice of 7 roller spacings from 2¼-12 in. on centers. Capac-



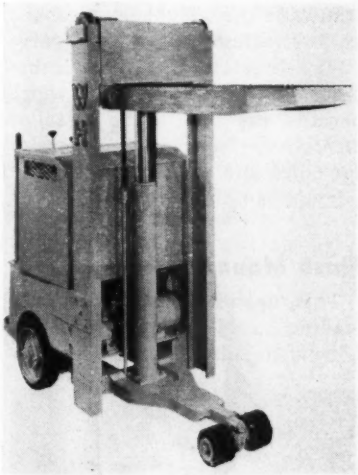
CARD....PAGE 51

ity is 250 lb per roller in normal duty use, subject to frame capacity of 2,750 lb (including weight of conveyor) when supported on 5-ft centers.

Circle 7 on Card Facing Page 51

Redesigned Platform Truck

A redesigned high-lift platform truck of the stand-up rider type, available in single lift and telescoping models, is announced by the Wright-Hibbard Industrial Electric Truck Co. It is being manufactured in a variety of platform sizes to handle different types of loads

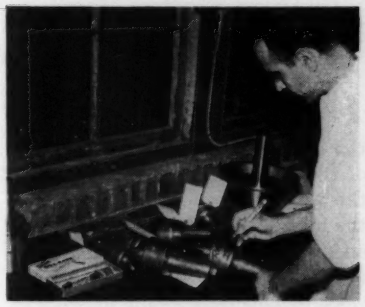


from 2,000- to 4,000-lb capacity. Most important improvement over previous Wright-Hibbard trucks is the hydraulically operated lift mechanism powered by a separate electric motor, which permits the operator to raise or lower the load while the truck is in motion.

Circle 8 on Card Facing Page 51

Writes on Anything

The new Dri-Brite brush pen, manufactured by Bass & Co., Inc., writes on paper, wood, metal, glass, leather, cellophane, burlap and many other materials. The

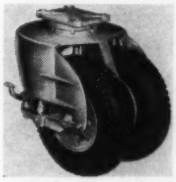


pen will not leak or clog and leaves a clear, bold, controlled mark which is waterproof and indelible.

Circle 9 on Card Facing Page 51

16-In. Pneumatic

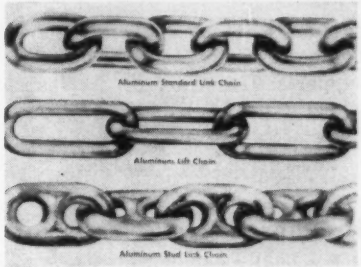
This new 16-in. pneumatic, individually sprung, dual shock-absorbing wheel and caster assembly, assures smooth load-glide over all rough surfaces, according to the manufacturers, The Aerol Co. The unit has special anti-shimmy brake for high speed operation without vibration. It weighs 75 lb and is cast of heat treated 365 aluminum.



Circle 10 on Card Facing Page 51

Aluminum Chain

A new aluminum chain which has 1/3 the weight of iron, needs no painting and is rust-resistant, has



been introduced by Bison Metals. Suitable for ornamental, marine and service use, the new chain is available in standard sizes.

Circle 11 on Card Facing Page 51

Smaller Parts

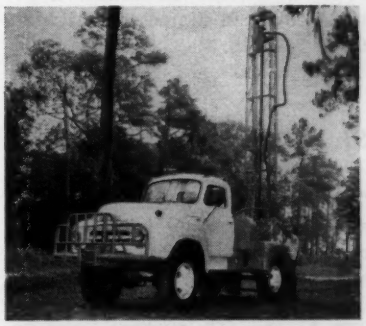
Designed for increased efficiency in the handling of very small parts, the new and smaller NesTier, made by Charles William Doepke Mfg. Co., is capable of handling 200 lb

with standard handle and 400 lb with heavy duty handle. It weighs 3 lb and has volume of 238 cu in., measures 12 in. long, 7½ in. wide and 4¾ in. deep. It nests and tiers by simply flipping the handles at both ends. When nested, only about 1/12th the space is required as when in the tiered position.

Circle 12 on Card Facing Page 51

For Rough Terrain

New International model R-140-4x4, powered by the 100 hp Silver Diamond 220 engine, is one of two 4-wheel-drive models in four wheelbases introduced by the motor truck division of International Harvester Co. for use in rough terrain. Model R-140-4x4, here mounting a Failing drilling unit designed for mineral exploration and seismic shot hole work, has gvw rating of 11,000 lb, in 130 or



142-in. wheelbase and is powered by the 108 hp Silver Diamond 240 engine. Front and rear axles of the new models are single reduction hypoid bevel gear type. Transfer case in both models has 1 to 1 and 1 to 1.87 gear ratios providing, in combination with the four-speed transmissions, 8 forward and 2 reverse speeds. Both models are available with front-mounted winch.

Circle 13 on Card Facing Page 51

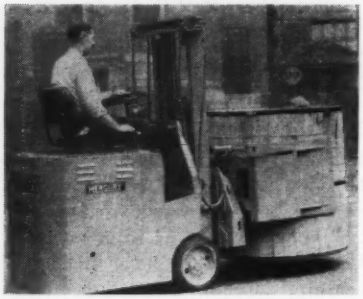
(*Please Turn Page*)

DA New PRODUCTS

Continued from previous page

Hogshead Attachment

Mercury Manufacturing Co. announces the production of a new hydraulically actuated hogshead attachment. The clamp is capable of picking up hogsheads resting horizontally on the floor, without

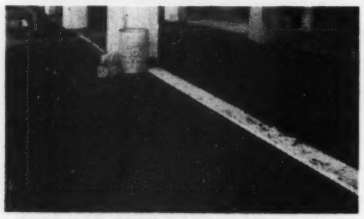


necessity of blocking and without special forward tilt range, usually incorporated in a roll handling chassis. Clamp will handle hogshead 48 in. in diameter, weighing up to 1,500 lb.

Circle 14 on Card Facing Page 51

Steel-Reinforced Flooring

A new heavy-duty flooring, called "Steel-Rock," combines a heavy steel mesh and special filler as a complete unit for surfacing floors subjected to extra-tough abuse. The

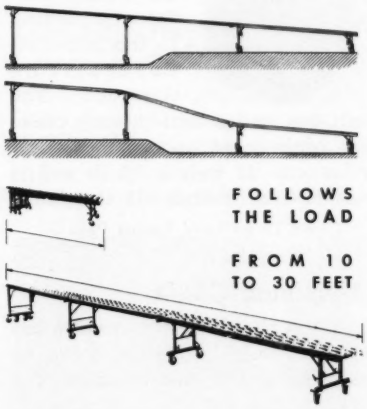


prime advantages of "Steel-Rock" claims United Laboratories, Inc., are in its ability to withstand impact as well as heavy loads and remain maintenance-free for years to come. The resilient filler used in the grid compacts to meet the level of the steel ribs thereby permitting the wheels to ride on steel without the noise and slipperiness of a solid steel surface. The product may be applied over new or old surfaces of wood or concrete, inside or outside, at a depth varying from ⅜ to 1 in., depending on job requirements.

Circle 15 on Card Facing Page 51

Adjustable to Levels

An important improvement in the Wilkie conveyor is its easy fitting into vehicles which do not meet the precise level of the shipping dock. The flexible 10-ft telescoping joints permit the conveyor to be placed on uneven or stepped



surfaces as easily as on level floors, utilizing the adjustable supports. The roller or the skatewheel type of load-bearing surfaces are offered.

Circle 16 on Card Facing Page 51

Handles Castings or Scrap

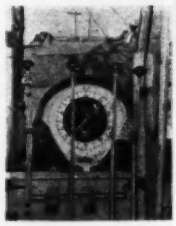
Especially adapted for handling of castings, cast iron or steel borings and steel turnings is this 6,000 lb. capacity Yale gas truck with lifting magnet supported on a gooseneck boom. The truck mounts a 36-volt model Z-36 Ready-Power unit which supplies the current to energize the magnet. The magnet can be hung in

four positions on the boom and the hook capacity varies from 4,700 lb at 36-in. outreach to 3,000 lb at 72-in. outreach.

Circle 17 on Card Facing Page 51

Crane Weight Indicator

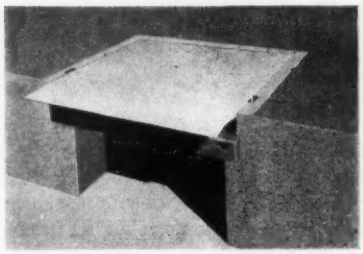
Martin-Decker Corp. recently placed on the market a sensitive weight measuring device which attaches to boom cranes, bridge cranes, and overhead hoists having capacities up to 200,000 lb. It consists of a heavy duty hydraulic pressure transformer (installed at the dead end of the hoisting cable), a high pressure hose which transmits the weight impulse, and an indicating gage with a large 12-in. direct-reading dial. It has a remote indicating system which permits the dial to be installed directly in front of the operator for quick and easy readability.



Circle 18 on Card Facing Page 51

Flush Mounted Ramp

This new Rite-Hite adjustable loading ramp, manufactured by Loomis Machine Co., recesses flush



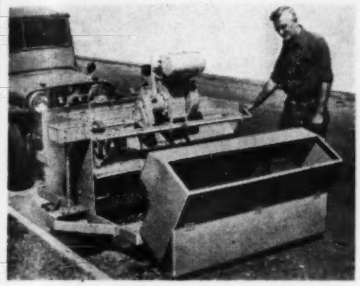
with dock level. Manually operated, the new unit has a capacity of 10 tons. Model 72-F offers the advantages of Rite-Hite's counter-

balanced, adjustable loading ramps, plus the advantage of permitting full use of all dock area when the unit is not in use.

Circle 19 on Card Facing Page 51

Pushed by Anything

A new power sweeper, called the "Yard Bird," has been announced by Little Giant Products. The sweeper can be pushed by anything that moves—fork lift truck, motor truck, industrial tractor, farm tractor, Jeep, etc. Special clamps are available for attaching

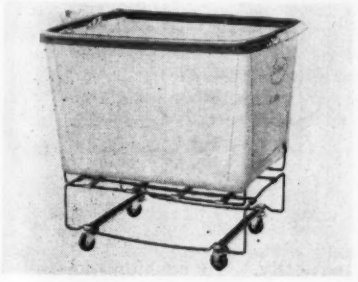


or detaching in a few minutes, requiring no tools. The broom is powered by a Wisconsin AEN air-cooled engine, sweeps a path 4 ft wide and has a 9-cu ft collection hopper with 25-gal sprinkler system to control dust. A 20-in. gutter broom is optional equipment.

Circle 20 on Card Facing Page 51

Elevated Basket

C. R. Daniels, Inc., announces production of a 4-bu capacity elevated basket that is also available with rubber swivel casters. Constructed with high grade spring



steel frames, the basket is made of tough canvas woven in Daniels' own mills with leather reinforcing the top, all corners and ends of pockets.

Circle 21 on Card Facing Page 51

Handles Heavy Bar Stock

This Portelvator application handles and positions heavy bar stock. Slots between rollers 1 and 2 and rollers 3 and 4 enable the chain of the overhead crane to be wrapped around the billets more securely. Manufactured by the

Hamilton Tool Co., the table has 2,000-lb. capacity, vertical travel of 14 in., with minimum height from floor of 20 in. and maximum height from floor of 34 in. Its table surface measures 18 x 20 in.

Circle 22 on Card Facing Page 51

Small Shop Model

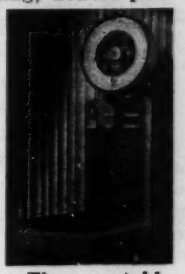
The new Hydrolift fulfills the demand for an all-purpose hand truck in the average plant. It has capacities to 2,000 lb and will stack in a 5-ft aisle with no trail-

ing high voltage wires. For occasional long hauls, a coupling can be provided on the Hydrolift for movement with a small powered tractor.

Circle 23 on Card Facing Page 51

New Industrial Line

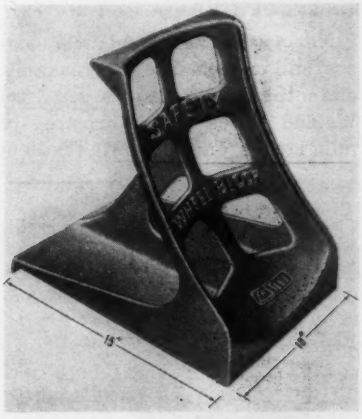
A full range of models from bench scales to heavy duty motor truck scales is included by Toledo Scale Co. in its new industrial line. One piece sectors featured in the new full floating, double pendulum mechanism are reported to increase precision and strength and eliminate the hand adjustments necessary in the older assembly of several components. The portable model has an 18 per cent larger platform and bench models 31 per cent, but with overall dimensions of the scale base reduced. The indicating heads can be installed to face in one of eight different directions; or a scale can be ordered with a head to swivel fully through 360 deg.



Circle 24 on Card Facing Page 51

Heavy-Duty Wheel Block

A Safety Wheel Block recently introduced by Calumet Steel Castings Corp., is 14 in. high and has a 15 by 10-in. base to provide maximum stability and holding power for blocking unusually heavy ve-



hicles and loads. The wide, curved tread plate is designed to accommodate the largest truck tires, yet provide maximum contact for smaller tires as well. Heavy steel gripper teeth on the base dig in and hold it firmly in place.

Circle 25 on Card Facing Page 51

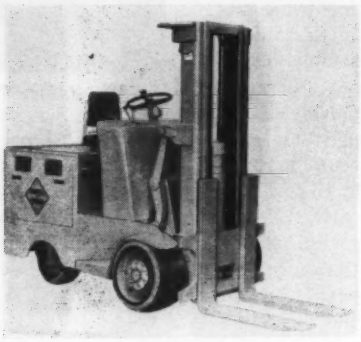
(*Please Turn Page*)

New Products

(Continued from Preceding Page)

10,000 lb Capacity

A new rugged, 10,000-lb capacity, electric - powered, hydraulically-operated fork truck has just been introduced by Elwell-Park Electric Co. The new model has front wheel drive, rear wheel steer, designed for tiering with telescoping lift, and tilting. The overall length, less

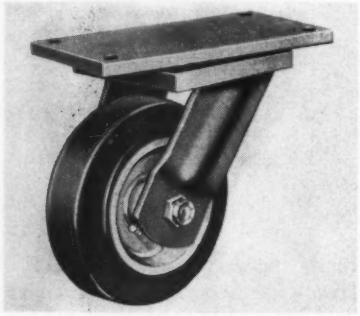


forks, is 97 in.; height, uprights telescoped—83 in.; uprights extended (36 in. vertical fork leg)—46 in.; maximum lift—110 in. The truck has a 61-in. wheelbase and, equipped with 42-in. forks, turns in intersecting aisles of 83 in.

Circle 26 on Card Facing Page 51

Unbreakable

New Clark fabricated steel casters and wheels are unbreakable, claim the manufacturers, All Steel Welded Truck Co. Fabricated of mild steel arc-welded into resilient



unbreakable units, the new Clark casters and wheels are available in a wide range of capacities, with sealed swivels and wheel bearings if desired.

Circle 27 on Card Facing Page 51

Automatic Addressing

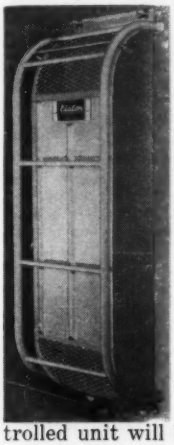
The new Weber addressing machine is a complete addressing department in a single compact unit that occupies no more space than the average typewriter. Mailings up to 2,000 pieces per hour can be handled. The machine operates on a spirit principle of reproduction,

requiring no stencil, metal plates, ribbon or ink and eliminates the need of bulk storage cabinets. It features an automatic name advancer and ejector which throws each addressed piece into a receiving tray. Addresses are transferred to the mailing piece from a typewritten paper tape. The original list can be used up to 100 times or a mailing every 2 weeks for over 4 years.

Circle 28 on Card Facing Page 51

Cargo Space Heater

More heat and better circulation are features of the Model X-800 cargo space heater designed by Rue

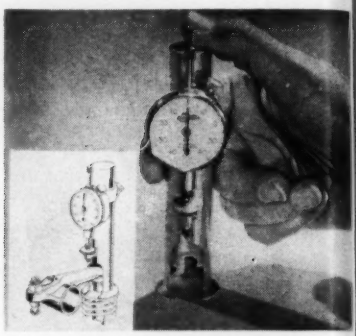


R. Elston Co. Output of the heater is 120 CFM and the stack temperature is 240 deg —an efficiency increase of 100 per cent. A 20-lb propane bottle will last 31 hours at continual operation. At intermediate heat the thermostatically controlled unit will burn up to 58 hrs, with dual bottle carrier up to 116 hrs.

Circle 29 on Card Facing Page 51

Valve-Gapper

The P & G Valve-Gapper, a new precision instrument, utilizes an entirely new principle in setting valve clearances, or "gap," on engines with overhead valves. The Valve-Gapper measures the travel of the valve rocker arm prior to contact with the valve stem. This measurement is transmitted to a

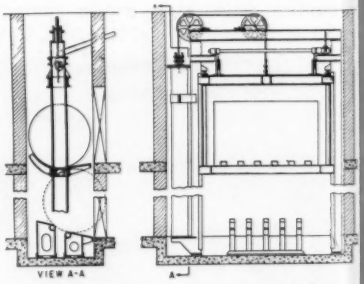


dial indicator gage graduated in thousandths of an inch. The easy-to-read dial permits a positive, visual setting of valve clearance regardless of wear or pitting of the valve rocker arm. Models are available for most gas and diesel engines. Model 101 is shown, inset illustrates it in position.

Circle 30 on Card Facing Page 51

Powerless Drop

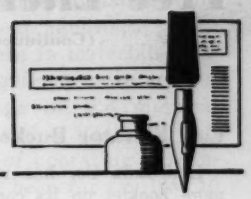
The Gifford-Wood Co. is introducing a Powerless Drop which mechanically lowers cylindrical loads like drums, barrels, rolls of cloth, rubber, paper, from one floor to another and discharges them auto-



matically. To cushion the fall, a piston-like counterweight, housed in a cylinder, moves up as the carriage moves down. The counterweight weighs more than the carriage and when the load is discharged the carriage rises for the next load.

Circle 31 on Card Facing Page 51

FREE Literature



Expendable Pallet

Described in a new brochure published by Continental Can Co. is an expendable pallet made of corrugated fibreboard, which cushions against shock and impact. A standard size 40 x 40-in. pallet weighs less than 5 lb and in engineering tests held up under 11,000 lb.

Circle 35 on Card Facing Page 51

Dock Shelters

What do you know about Loading Dock Shelters and Canvas "Wall" Curtains? Atlas Industries, Inc., gives detailed information in a 20-page booklet, which explains the various types of each product and their uses.

Circle 36 on Card Facing Page 51

Custom Vans

Gerstenslager's new catalog 103, illustrates custom bodies for furniture and moving vans and drawings of the construction for a typical van. Additional accessories and hardware are displayed in the back of the spiral-bound booklet.

Circle 37 on Card Facing Page 51

Gas vs Electric

"The Gas vs Electric Question" is the subject of a file published by Lewis-Shepard on the two types of trucks. Based on published reports by various fork truck manufacturers, eight fact sheets on the two types, answer such questions as longevity, depreciation, repairs and lubrication costs. Included are two Industrial Truck Maintenance Report forms for you to check your own trucks.

Circle 38 on Card Facing Page 51

Load Unit System

A bulletin from Market Forge Co. describes and illustrates its "Load Unit System" consisting of the Marforge load-unit (an all-steel welded box on legs), load rack (an all-steel welded light weight self-contained rack, containing five load units in approximately the same floor space occupied by one box), and a Marforge fork truck, lift truck or hand load lift.

Circle 39 on Card Facing Page 51

Field Reports

Latest field reports No. 17-21 from Hyster illustrate industrial application of their fork trucks in brick manufacturing, custom sandblasting, lumber and plywood, freight car builders, wood preserving and in a smelter. Profusely illustrated, the reports show detailed picture stories.

Circle 40 on Card Facing Page 51

Industrial Truck Batteries

C & D Batteries, Inc., has released it latest specifications bulletin covering their complete line of industrial truck batteries. It gives such details as dimensions, wet and dry weights, types of containers, and capacities at the 6- and 8-hour rate.

Circle 41 on Card Facing Page 51

Casters and Trucks

The Rapids-Standard Co., Inc., has issued a new 35-page catalog of their "flame-hardened" casters and trucks. The exploded views show insides of caster construction along with illustrations and specifications of various sizes of casters offered.

Circle 42 on Card Facing Page 51

Films

Alaska Cargo Handling

The Alaska Steamship Co. has just completed two color pictures, "The Alaska Line" and "This is Alaska," each 27 minutes in length. "The Alaska Line" is an educational film dealing with the handling of cargo starting in Seattle and ending in Alaska.

"This is Alaska" is a travelogue. The observer is taken on a trip visiting various towns in Alaska, showing them as they are today, and depicting the industries now existent there. The films can be booked through the office of Mr. Henry Clark, Suite 307, 711 14th St., N.W., Washington 5, D. C., and through the offices of the Alaska Steamship Co., Pier 42, Seattle 4, Wash., attention: F. A. Zeusler.

Metal Floors

Acme Steel Floor Plate, a special 11¾-in. sq unit of hot rolled steel designed for one square foot of floor area, is described in a new brochure just off the press. With this reinforcement, the surface of a floor consists of 74 per cent steel and 26 per cent concrete.

Circle 43 on Card Facing Page 51

Portable Warehouse

"Cocoon," a sprayable plastic coating, manufactured by R. M. Hollingshead Corp., is described in a manual titled, "Need A Portable Warehouse?" The manual outlines steps for all-weather anti-corrosion protection for machines, engines, fixtures, from 1 to 10 years outdoor storage.

Circle 44 on Card Facing Page 51

Wire Conveyor Belting

Flat-Flex Wire Conveyor Belting, manufactured by Wire Belt Co. of America, is described in a new bulletin as applicable for baking, drying, cooling, spraying, etc., where minimum contact with materials is essential.

Circle 45 on Card Facing Page 51

Wire Stitching

How a wire stitching machine puts an arc in a cross-section of flat wire and then drives and clinches the stitch at high speed is the subject of a new bulletin from Acme Steel Co. It explains how Arcuate (pronounced R-Q-IT) stitching cuts wire costs, makes neater looking boxes and reduces machine down time.

Circle 46 on Card Facing Page 51

Chain Hoist

The "Pul-Lift," an unusual chain hoist design which either hoists or pulls, is illustrated and described in Bulletins P-260B and P-1260 released by Yale & Towne. Developed to meet the demand for a general purpose tool, the Pul-Lift operates in close quarters by means of short strokes on a ratchet handle and is ideal for riggers' equipment.

Circle 47 on Card Facing Page 51

(Please Turn Page)

Free Literature . . .

(Continued from Preceding Page)

Cast Elevator Buckets

Link-Belt Co. has released a 12-page booklet on its complete line of cast malleable and Promal elevator buckets, including Styles A, AA, AA-RB, B, C and Continuous, for handling such diverse materials as coal, coke, ores, grain, cement, chemicals, pulp; clay, sugar, salt, etc. Fifty-five standard sizes are listed and tables give dimensions, weights and capacities.

Circle 48 on Card Facing Page 51

Industrial Signal Guide

A new combination manual, data book and catalog of sound signals has just been issued by Benjamin Electric Mfg. Co. Some of the subjects covered include a Simplified Explanation of Fundamentals of Sound; a Glossary of Signal and Sound Terms; A Quick-Comparison Guide for Selecting Signal Equipment; Nine Suggested Steps in Choosing a Signal Installation and Hints for Compiling a Coding Signal Call System.

Circle 49 on Card Facing Page 51

Chain-in-Floor Conveyors

A new booklet titled "sounds incredible but . . ." released by Jervis B. Webb Co., cites savings made by truck terminals using Webb Towveyors. For old terminals where it is not desired to disturb present floors, similar economies are claimed for Overhead Tow Conveyors. Sixteen advantages given, also list of existing installations where systems can be seen in operation.

Circle 50 on Card Facing Page 51

Industrial Truck Catalog

Publication of a new and revised catalog covering electric-driven industrial trucks is announced by Automatic Trasportation Co. For the first time, the catalog includes data on Automatic's new "Dynamotive," a gas fork lift truck with electric transmission. The catalog illustrates and describes representative models of Automatic's riding-type and driver-led electric trucks.

Circle 51 on Card Facing Page 51

Steel Strapping

Gerrard Steel Strapping Div. of U. S. Steel Co. has issued a new booklet, "Blue Book of Packaging," illustrating numerous industrial applications of its strapping machines, including parcel post packages, small machine parts, fruit, bottles, newspapers as well as items like palletized cylinder heads, flat cars of lumber and horizontal strapping in box cars.

Circle 52 on Card Facing Page 51

Gas-Fired Space Heaters

Case Study No. 560-65, recently issued by Dravo Corp., explains how gas-fired warm air space heaters were positioned to heat the truck loading platform in a large department store warehouse. Working automatically, they blocked off cold air flow back into the storage area. The report gives descriptive details of the installation plus illustrations.

Circle 53 on Card Facing Page 51

Books

Insurance Coverage

The newest edition of "Coverage and Forms" contains information about every conceivable insurance coverage, including warehouse and carrier. The book is written in a unique question and answer style. All the major points of every coverage are listed as answers to questions. If you're in doubt about the general nature of a certain coverage, there is a section which describes the situations where such coverage is actually used. It tells you what other coverages are similar and how they might better suit your purposes. The Spectator, Dept. C, 56th & Chestnut Sts., Phila. 39, Pa., 544 pp., $10.

Interstate Commerce

The first of a three-volume series on "Interstate Commerce Law and Practice" has just been published by the College of Advanced Traffic. Part I gives a historical background of Federal Regulation of Interstate Commerce; Part II presents The Amendatory and Related Acts; Part III relates the Construction and Interpretation Of Interstate Commerce Act, noting all the changes and the effect on the various types of transportation. The volume also contains a Glossary to Foreign Words and Phrases; Key to Citation Reports; Notes and Citator. College of Advanced Traffic, Educational Div. of The Traffic Service Corp., Book Sales Dept., 22 West Madison St., Chicago 2, Ill., $7.50.

Food and Dish Handling

Lamson Corp. has issued a new catalog titled "Faster Food and Dish Handling with Lamson Trayveyors." This two-color, 24-page booklet has been developed to illustrate the numerous advantages to be derived from the installation of a Trayveyor in hotels, clubs, hospitals and similar institutions. Single duty models for ascending service, descending service or reversible type for up or down service are available. A double duty model carries trays in both directions simultaneously and is equipped with automatic devices to stop the machine if loads are not removed upon arrival at the indicated station.

Circle 54 on Card Facing Page 51

Trial Floor Offer

In a new brochure published by Permaflex Products Co., a 5-gal pail of Permaflex Hard Mastic Floor Compound—sufficient for 90 sq ft, ½ in. thick, is offered on a trial basis. Photographs illustrate various installation applications of Permaflex, claimed to be dustproof, slipproof, fireproof, non-tiring to walk on and quiet.

Circle 55 on Card Facing Page 51

Chicago Public Warehouses

As a service to shippers and others allied with the transportation field, the Chicago & Eastern Illinois Railroad has published a "Directory of Public Merchandise Warehouses in the Chicago Switching District," containing detailed information on 128 warehouses in the area. Locations are keyed to a map which indicates for each warehouse its rail service, size classification and kinds of merchandise stored.

Circle 56 on Card Facing Page 51

Cone Drive Gears

Compact, increased capacity, less weight, less maintenance, lower cost, smoother operation are descriptions of the cone drive gears, manufactured by Michigan Tool Co., illustrated in a new 35-page booklet. The effective use of these gears in the aircraft, agriculture, baking, chemical, mining and steel industries is illustrated.

Circle 57 on Card Facing Page 51

Carton Stapling Machines

A new catalog from International Staple & Machine Co., illustrates its carton stapling machines for stapling corrugated or fibre cartons. Sketches show how the retractable anvil stapling heads work, which prevents damage to contents by controlling penetration depth of staple.

Circle 58 on Card Facing Page 51

. . . What's Wrong With It

(Continued from Page 31)

and with communication systems, and all other elements needed to do a complete handling job. So let's quit thinking of conveyors as an entity and look at them as they really are—just another tool to lighten the labors of men — all fitted into the pattern of overall industrial progress.

The great opportunity for the truck industry lies in designing equipment that can be easily and economically adapted to do a specific job.

We operate several hundred fork trucks and many more trucks of other designs in our industrial plants. We know what their failings are, as well as their good points. We have learned a lot about how to use them effectively. With this experience behind us we can confidently say that while the truck manufacturers are doing a good job of truck building, we feel sure that the future designs will be tailored more to the customer's needs than emphasizing yearly models.

The more versatile a truck becomes in performing the motions that man can perform, the more useful it will become. Also trucks will have to continue to get physically smaller in relation to the loads handled, and, as mentioned of conveyors, learn to become a part of a handling team rather than a rugged individualist.

Although it is fast disappearing, there still exists today the reluctance on the part of sales representatives to discuss with a prospective customer, equipment other than that which he can furnish. If these men would only realize that by failing to analyze the whole problem that their own equipment may invariably fail to produce results, they would tear down these barriers to progress. In most every industrial plant there is a place for both fixed and mobile equipment and much of it has to work in the right combination for overall results. There is nothing to fear from competition if you have the right product for a given task and apply it properly. •

W. J. Dernberger*
Ford Motor Company

MATERIALS handling is probably 90 per cent of the automotive industry's problem. We have mechanized to the extent that any industry has, and we are ready for the second step in materials handling—getting more out of our handling equipment.

Along with our present types of equipment, we are going to need a better machine in practically every instance because when we analyze productivity and effectiveness of materials handling equipment we are going to find some bugs.

Analyzing Operation

We haven't the type of job analysis technique that will explode the handling job and get it out where we can schedule and control handling operations. Various techniques of job analysis are being developed and streamlined to get the measuring unit which can measure the effective use of our equipment and our people who operate it. When we begin to find the bugs that keep us from a more effective use of people and equipment, we will have to come to you for changes in design. Clumsy, slow, single-purpose equipment will have to be replaced. New plant layouts and arrangements will be made to eliminate bottleneck areas which have tended to spread confusion into other areas of the plant. Conveyor storage will be back with us where the inconsistency of material flow would cause inefficient handling.

This new era in materials handling will require a more conclusive knowledge of the material handling operation itself as well as the using of operating personnel. We have been for the last 10 or 15 years primarily engineering in materials handling on the equipment only; that is, we have been taking men out and putting machines in.

But, your handling engineers and designers of handling equipment will all have to know more about it.

The lateness of some developments is due to the late start in experimental development. Too much stress is placed on developing *after* an order is placed and too little stress is placed on the preliminary engineering and tryout *before* the order is received.

More Flexibility

We will require equipment with more flexibility, quicker, safer and smoother operation. We are going to look to you to increase the capacity of present equipment and reduce its cost.

From the automotive industry standpoint, there is no one area that stands out today for mechanized handling more than the shipment of materials. Thousands of cars a day of material that move around the country are used in the automotive business and a very small percentage of it is mechanically loaded. One of these day the automotive people will be calling on you to help develop the features necessary to load material in cars, that is, load parts normally manually handled, and get into the bulk handling of it.

And another challenge from the automotive industry is for your representatives to come in and take a look at the job and possibly see what a particular piece of equipment will do, then sit down and discuss a better way or recommend a piece of equipment or a development that will help the progress in handling. We would caution regarding the people whom you send in—they must be qualified. •

(*Please turn to page* 57)

* Mr. Dernberger died of a heart attack shortly after his appearance at this meeting. A noted authority on materials handling in the automotive industry, Mr. Dernberger spoke often on this subject before national and regional meetings, and was a frequent contributor to DA.—Ed.

Efficient Distribution—Today's

Our economic future depends, in a large measure, on our ability to improve

By Theodore J. Oechsner
Manager, Consolidating Div.
General Traffic Dept.
United States Rubber Co.

THE ECONOMIC welfare of our nation in the immediate and foreseeable future will depend, in a large measure, upon our ability to improve the techniques of distribution. The miracles of our tremendous capacity to produce have astonished the world and, as such, is not the real problem facing us today. Our real problem today is at the other end —the distribution end.

In the past, there have been some who assigned or relegated distribution a minor role. Today, it cannot be ignored: It is tremendously important to our economy if we are to channel the products of our factories into consumer hands at prices that will keep our economy functioning in high gear.

Actually, it costs more money today to distribute than it costs to produce. It is roughly estimated that 49 cents out of every dollar is allocated to production, whereas 51 cents is spent for distribution.

Competitive pressures are developing and strengthening nationally as many manufacturers endeavor to move into new markets or capture a larger share of the existing ones. Expanding or moving into new markets can only be accomplished through efficient and up-to-date distribution techniques.

Three Leading Methods

Unfortunately, no one distribution pattern or method has been devised that will successfully market and distribute all products. Consequently, direct shipment from factory to customer, warehousing — either public or private, and operation of company branches or stores are the three most recognized distribution methods.

Regardless of the distribution method employed, there are economic factors at work today that are challenging to all. These factors came into existence after World War II, although they only became apparent, in a real way, about a year or two prior to the outbreak of the Korean conflict.

It was about 1948 that the real evils of inflation became apparent to all. At that time, and the practice will be very much in evidence for a long time to come, the average customer started to keep his commitments and stocks well proportioned to his sales.

He started emphasizing turnover with little, if any, inventory. The average industrial purchasing agent inaugurated a policy of operating on a short rather than a long term commitment.

Most of our customers who had previously purchased in carload or truckload quantities are now buying in quantities that are considerably below the required carload and truckload minimums. We have many more ltl or lcl shipments to route, bill, and dispatch.

To complicate matters, the customer is insisting on the best possible delivery because he has little or no inventory. This last fact is important because of competition.

Public Warehousing

One solution offers the public warehouse as an aid in distribution. Previously I referred to competitive pressures that are developing and strengthening as many manufacturers endeavor to move into new markets. To distribute efficiently in these new regional or national markets, the maintenance of spot stocks is an economic necessity.

As an active user of public warehouse facilities, the following are deemed attractive advantages:

1. Strategic location of the public merchandise warehouse as an aid in efficient distribution is probably the number one consideration.

2. The warehouseman is a professional storage and distribution specialist. He is intimately familiar with all the varied products that come into his custody. Moreover, he is a disinterested third person.

3. The warehouse is usually centrally located in the business district, with a private rail siding generally open to reciprocal switching.

Editor's Note: Mr. Oechsner, who also is an instructor in the New York University Department of Transportation, spoke on this subject at the September meeting of the Traffic Club of Newark.

Challenge

distribution techniques

4. Large public warehouses are usually motor freight terminals. Some have deep-water dock facilities.

5. Low insurance rates for commodities stored.

6. From a cost viewpoint, the public warehouse is usually less expensive than one that is company-owned and operated. Storage space is flexible. The client only pays for the space he uses and requests.

Consolidated Shipments

Another distribution aid of paramount importance today, in view of the tremendous increase in lcl and ltl shipments, is the establishment of regularly scheduled consolidated carload and truckload shipments to major markets.

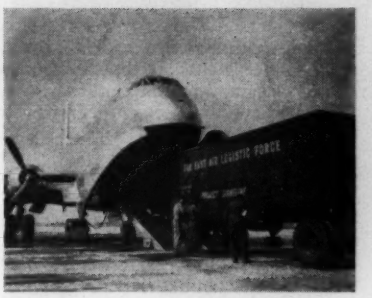
Techniques of consolidation are many and vary perceptibly, depending upon the product and the territory to be serviced. However, the following are, in general, the outstanding advantages to be gained through consolidation:

1. **Expedited Service:** Carload and truckload freight clears congested freight terminals. This is vital today because of the short-term commitments of most customers.

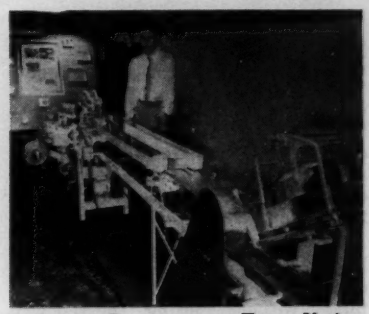
2. **Reduction in Loss and Damage Claims:** Customer satisfaction disappears completely when a long-awaited ltl or lcl shipment arrives in questionable condition. Since the shipper loads consolidated carload and truckload

(*Please Turn to Page* 96)

Industry Items



Flying Repair Shop Airborne to Korea: Fully-equipped 26-ft trailer provides swift, expert maintenance on intricate radar-controlled gun sights of USAF's F-84 Thunderjet and F-86 Saberjet fighters in the field



Packaging Demonstrator Tours Nation Introducing New Wrap-Pak Container: Interior of show trailer is equipped with Hayssen Automatic Machine using Reynolds Metals Co. new refrigerated and frozen food container

High school seniors from 11 states are eligible to compete for 12 or more $500 college scholarships under the **Consolidated Freightways** 1953 scholarship program.

Additional cargo lift on its transcontinental routes, and improved service to shippers between east and west coast markets are provided by **Trans World Airlines** in its new all-cargo schedule pattern.

International Harvester has opened a motor truck sales and service branch in Phoenix, Ariz.

Midvale Material Handling Equipment Co. has been named the St. Louis area distributor for **American MonoRail Co.**

Appointment of **St. Louis Railway Supply Co.** as distributor of industrial trucks and cranes to railroads in the St. Louis area has been announced by **Baker-Raulang Co.**

At the recent 127th Annual Meeting, **Baltimore and Ohio Railroad** stockholders re-elected all 12 directors of the company.

Industrial Trucks, Inc., Fairfield and Rocky Hill, Conn., has been appointed to handle industrial trucks for **Yale and Towne Mfg. Co.**

Pan American World Airways has begun a series of cargo flights carrying 19,000 lb of bananas from **Columbia to Miami** on each plane. At Miami the cargo is loaded on a waiting reefer truck for shipment to the Midwest market.

National Carloading Corp. has announced formation of a Southern Division, with headquarters in Atlanta, Ga.

Trailmobile Inc. increased to seven its list of factory branches in Ohio when the new sales and service operation at Dayton was recently opened.

The appointment of **F. E. Bennett Co.,** Portland, Ore., as sales representative in Oregon has been announced by **Magnesium Company of America.**

Rotary Lift Co., Memphis, Tenn., has named **Rucker Co.,** Oakland, Cal., distributors of industrial lifts for the states of Washington, Oregon, Idaho, Arizona and Nevada.

Clark Equipment Co., a leading manufacturer of materials handling equipment, has revamped its dealer organization in the east to handle its newly-acquired Ross straddle carriers and fork truck lines.

Maintains 24-hour Safety Patrol Service: Branch's new safety patrol truck features radio-telephone, spare parts, fire equipment, photographic outfit for insurance purposes

20th Century Delivery Service Opens New Building with 250-ft Conveyor: Incoming wholesale and air freight is carried in straight line from pickup truck, through marking, to portable bins for loading on to outgoing trucks for delivery in Los Angeles area

Are Your Trucks . . .

(Continued from Page 34)

the exhausts of the internal combustion engine without using the proper volume inside the muffler in order to do it. And the larger the engine, the larger must be the exhaust system to carry that gas and, in turn, the larger must be the volume of the muffler in order to reduce the pressure variations to an acceptable level."

Larger engines in the 250 and 300-hp class require a muffler about 5,000 cu in. in volume to get adequate muffling without losing horsepower, Nelson said. "The volume is the important thing, with the shape of secondary importance, and the muffler designer has been able to adapt his acoustic design to the long, skinny variety or to the short, fat kind.

"Besides going in one end and out the other end, in the conventional manner, he is sometimes able to route the gas flow in and come out the same end of the muffler, or even through the side of the body. Here, again, it is a question of working with the truck designer."

Richard L. Hardgrove, vice president, Liberty Highway Co., Toledo, Ohio, learned after making tests on a truck with a noisy muffler, which resulted in an arrest in a South Bend, Ind. muffler noise drive, that noise is not necessary for maximum power.

A back pressure gage installed in the exhaust pipe with gvw load of 52,000 lb was checked at various speeds up to 2800 rpm governed speed. The top back pressure registered one-half pound. Then the noisy muffler was removed and a 7 x 31½-in. "offset-through" type of muffler installed, which proved to be quieter. Again the back pressure was checked and the results was the same.

Muffler Size

"Legislative procedure has compelled the manufacturer of vehicles to materially shorten the chassis wheelbase, in order to maintain a legal limit in overall length," said B. F. Jones.

"This also results in cabs mounted over the engine, requiring wider cabs, thus making it difficult to mount the muffler alongside the cab and maintain a vehicle overall width of 96 in. With present-day transmissions, auxiliary transmissions, fuel tanks, battery boxes, etc., the location of a muffler of increased size becomes quite a critical problem.

"Weight of vehicles, due to legislative restriction on total weight, has received the attention of the operators in recent years. Any reduction in weight by the vehicle manufacturer resulting in an increase in payload pounds is welcomed by the fleet owner.

"In fact, he is willing to pay additional for weight savings, if he can visualize a decrease in his operating costs due to increased pay freight weight. Because of the larger mufflers required to reduce noise to a reasonable level, some of this weight savings is lost in the heavier weight of exhaust equipment carried.

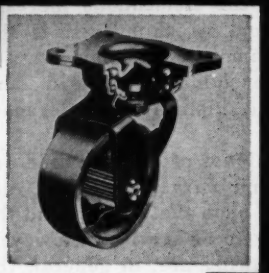
"Mufflers designed to ensure low noise levels will be much larger than the ones they replace. Studies are being made by both the truck manufacturers and the muffler manufacturers, with the object in view of producing a muffler having long life as well as low costs, and as light in weight as possible."

"An exhaust system designed and installed to provide the lowest possible exhaust back pressure is a sound investment towards securing the best operation of the engine and will pay for itself in reduced fuel consumption, decreased maintenance costs and greater availability of the equipment," said M. L. Fast, supervisor, test engineering, Cummins Engine Co., Columbus, Ind. •

(Resume Reading on Page 35)

Specify

DARNELL CASTERS



There is a type of Darnell Caster or Wheel for every kind of use and floor. Made for light, medium and heavy-duty service, you are sure to find in the Darnell line the exact caster or wheel to meet your individual requirements . .

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Circle No. 109 on Card, facing Page 51, for more information

What's Wrong . .

(Continued from Page 53)

Frank C. Wier
The Timken Roller Bearing Co.

I THINK the president of most companies is not going to go to any great length to learn about material handling himself. Usually the boy that gets the job is the young man just out of school. In order for him to get along in the world he has to do some good; he has to save some money, make some money, do something. He is in a position where he wants to have a gain out of everything he touches, and the net result is that he goes too far.

I think we are interested in the end in creating the most goods that will go out the door as a finished product for the least price.

I had the privilege of sitting in a conference with the vice president of a company along with the general superintendent. The subject was materials handling. The general superintendent said, "A couple of years ago we had a consultant in and he made a survey and it was decided that it would cost too much money. Any time you want better materials handling, we can get that survey out and follow the recommendations."

In another situation that I know of in a steel mill where they have a large materials handling problem. I had the opportunity to look at the outside of a report of that kind. The only man who ever read it was the young engineer who made it. No one else is ever going to read it, so material handling in that steel mill is set back ten years because top management said, "We had a survey made but it would cost too much money to do the job."

If you want to excite a man's imagination, you do it with physical things, not with a pencil and paper. Give him things out in the field, demonstrate to him, and he starts to think and then starts to act.

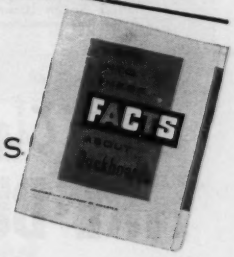
I believe that if we would get more demonstrations and less surveys, we would get along better. If you want to kill it, have a survey, it won't go anyplace—go out and do it, but don't try to do the whole plan at one time and it will breed three others like guinea pigs.•

(Resume Reading on Page 54)

LOOKING INTO THE FACTS . . . LEADS INEVITABLY TO **MAGCOA**

DO YOU WANT THE FULL, MONEY-SAVING *Facts* ABOUT DOCKBOARDS ?

THIS NEW FACTS FILE GIVES THEM TO YOU . . .



The new Magcoa *Facts File* is full of facts you ought to have before you invest in a bridgeplate for your loading dock. Here are some of the facts you'll find in your copy—

- The actual costs of dangerous makeshift plates
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PHILADELPHIA 18, 8001 Southampton Ave.
WASHINGTON 5, D. C. Walker Bldg.
HOUSTON 17, 7657 Moline St.
LOS ANGELES 34, 8922 W. 25th St.
SAN FRANCISCO 4, Russ Bldg.

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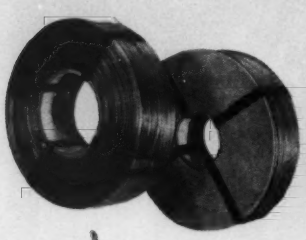
Name & Title_____
Company_____
Address_____
City–Zone–State_____

Circle No. 110 on Card, facing Page 51, for more information

Circle No. 111 on Card, facing Page 51, for more information

The Combination for Your Stitching Problems



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Central Stations in All Principal Cities

A·D·T

Circle No. 112 on Card, facing Page 51, for more information

Diesel Engine . . .

(Continued from Page 37)

Production is so accurate that the various conveyors deliver to each assembly man the exact part for the type and size of engine he is to work on.

Pin-Point Control

Time and labor are saved through proximity of adequate casting storage yard, adequate rough storage area inside the building, numerous conveyors to move rough materials from storage to the machine lines, an efficient industrial railway layout and the movement of material through an open inspection area.

Suitable space for storage of finished parts and the efficient application of bridge cranes, fork trucks and other related materials handling factors have given this plant a flexible and efficient movement of materials.

With the finish of the assembled engine, the work of mechanical handling is not completed. At the end of the assembly line, the engines automatically feed themselves on a power driven roller conveyor which carry them on to the testing room.

Crane Handling

At the end of this roller line, a high speed bridge crane picks the engines off the conveyor and carries them across the bay and into the two banks of test cells.

The crane lowers the engine on to the stands in each test cell. At the end of test, the crane picks up the engine and deposits it upon another roller conveyor which carries it on to final inspection.

If the engine has passed the test, the inspector switches it on to the conveyor leading to the spray paint booths. If it does not pass, it is switched on to another branch of the conveyor system which leads to the tear-down department for a rebuilding.

Engine Installation

Some accepted engines, after passing automatically through the spray paint booths and into the drying ovens, continue on the powered roller conveyor to the installation department. Here they are switched over for installation in Caterpillar machines.

Other finished engines are switched off onto another branch and moved to the shipping department. They are crated while moving on a floor type chain drag conveyor which ends up at the shipping platform. On the platform they are palletized for fork truck movement to waiting railway cars. •

(Resume Reading on Page 38)

1953 Handling...

(Continued from Page 38)

rials handling equipment became more widespread. Long-term financing of the outright purchase of equipment also had the effect of expanding the markets for equipment.

The increased use of electronics in the control of conveyors, pallet loaders, packaging equipment became more general pointing the way toward more complete automation.

One of the needs for the future of both manufacturers and users of materials handling equipment will be trained manpower on all levels. In the next few years users will have to find many thousand more qualified men to operate new industrial trucks alone. More will be required to supervise, service, maintain and repair just this one type of equipment.

Manufacturers will need more trained engineers than are now available to design, build and sell the tools of materials handling. The need is especially great for men who can translate successful materials handling techniques from one industry to a different one.

MH Education

A major part of the program of the MHI this year was devoted to education at all levels. We embarked on a program of organizing conferences on materials handling slanted specifically by subject and caliber of participant to top management. The first such conference attended by 200 executives in the Detroit area was an unqualified success.

Our Industry Educational Committee published a series of booklets for professors, engineers, students and consultants. In cooperation with the American Material Handling Society, the MHI supported the efforts of the College Industry Committee for Materials Handling Education to help set up courses at colleges and universities and to point out to students the opportunities for a career in several phases of materials handling.

Executives of 79 member companies participated in a traveling clinic program to help educate users in the proper use of equipment and techniques. Two clinics were held in 1953, in New York City and Boston. Firm plans have been made to send a part of the traveling team to Montreal early in 1954. A multi-panel clinic is scheduled to convene in Chicago early in 1954. •

(Resume Reading on Page 39)

MHI in the News

For additional news of MHI activities, including the Annual Meeting and Election of Officers, see Chuting the News, Page 12.

TOWMOTORS IN ACTION IN U. S. INDUSTRY

Modern transportation demands the ultimate in materials handling. This Towmotor LT-60 is one of a fleet owned by the Flying Tiger Line.

Get up and go...

Towmotor has the "get up and go" you want to speed materials through each step of receiving, storage and production right into the carriers—even when you're short-handed! This "one-man-gang" lifts, carries, lowers and positions any load that can be *handled.*

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. . . Federal Rate Controls

(Continued from Page 41)

the most favorable volume of traffic, and receives conflicting evidence on this subject from the proponents of and protestants against a general rate increase, the easiest solution for the Commission will continue to be not to accept the contentions of either party completely, but to reach its own conclusions as to what rates it would charge if it were carrier management.

A more realistic approach under present competitive conditions would be that the carriers themselves are the best judges of the level of rates which will either gain or lose them business.

A third proposal recommends a reduction in the period for suspension by the Commission of proposed changes in the rates of railroads, common motor and water carriers, and freight forwarders from seven months to a maximum of six months.

The length of the suspension period has been modified from time to time since the passage of the Interstate Commerce Act. The latest change, in 1927, increased the period from a maximum of five to seven months.

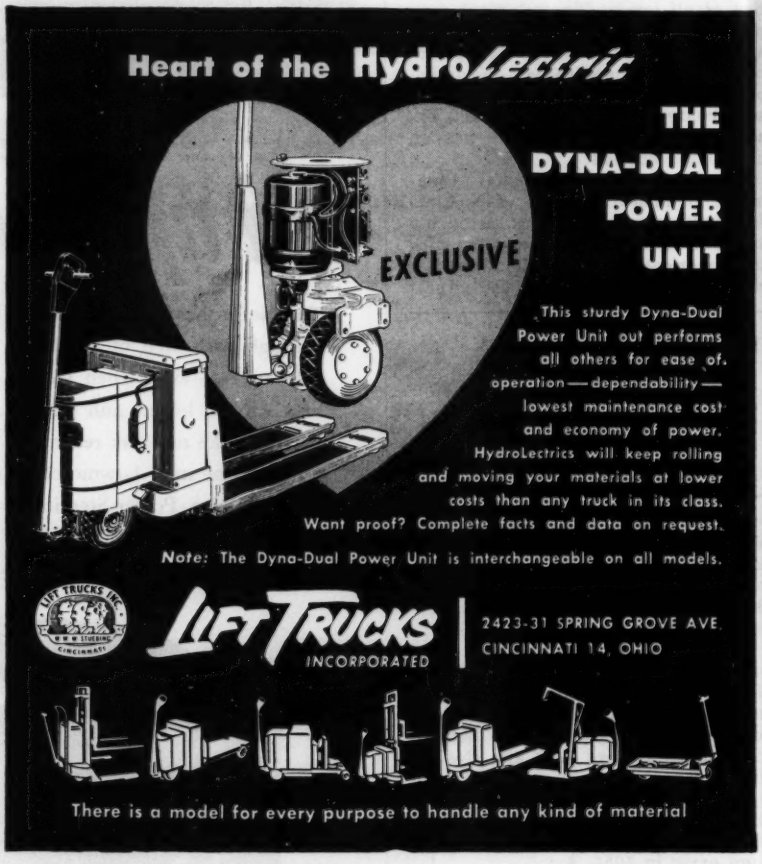
In actual practice, and particularly in the more complex and important suspension cases, the Commission, finding that it cannot meet the deadline of the statute, often requests the carrier proposing the rate changes to agree to an extension beyond the seven-month limit.

There is no statutory basis for this Commission action. On the contrary, the statutory language indicates a Congressional intent that the suspension period should not be prolonged beyond seven months, even though a decision has not been reached by the Commission in that time.

Carriers faced with such a request, and fearing an adverse decision should they refuse to accede, have in the past usually agreed to postponements of the effective date of rate changes. In many cases this has resulted in extensions far beyond the seven-month period.

Any reduction in the suspension period, even if it is nullified in many cases by voluntary extensions, would benefit the carriers in the numerous proceedings where the Commission, after holding up the effective date of proposed rates for seven months or more, eventually finds them justified.•

(Resume Reading on Page 42)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...Mending Now

(Continued from Page 39)

to accomplish these objectives exists now. I refer to the national movement called Project Adequate Roads.

According to the U. S. Bureau of Public Roads, it will take about $8½ billion to correct the existing deficiencies in our local rural roads and in the national system of interstate roads.

To finance these needed improvements over a ten-year priod would require about $1¾ billion per year, in addition to present maintenance and other costs.

Now the question is, where is this money to be found:

The most equitable answer lies in this three-point program:

Finance Program

1. End diversion of the motor vehicle revenues. Diversion has amounted to about $200 million annually for some years.

2. Make available to the states the present two cents per gallon federal tax on gasoline, plus the other federal excise taxes on motor vehicles, tires, and parts, which were enacted originally as emergency measures.

In advocating an end to the federal gas and other motor vehicle excise taxes, I am not advocating an end to federal highway aid. The U. S. government has a basic responsibility toward our highway system which should be maintained.

3. Make an across-the-board, proportionate increase in the present gasoline and license taxes, if insufficient revenues are available in any state for its highway modernization program after every reasonable means has been taken to set up the necessary funds. The increase should be designed to handle the costs of that improvement alone, and should expire at the end of the financing period.

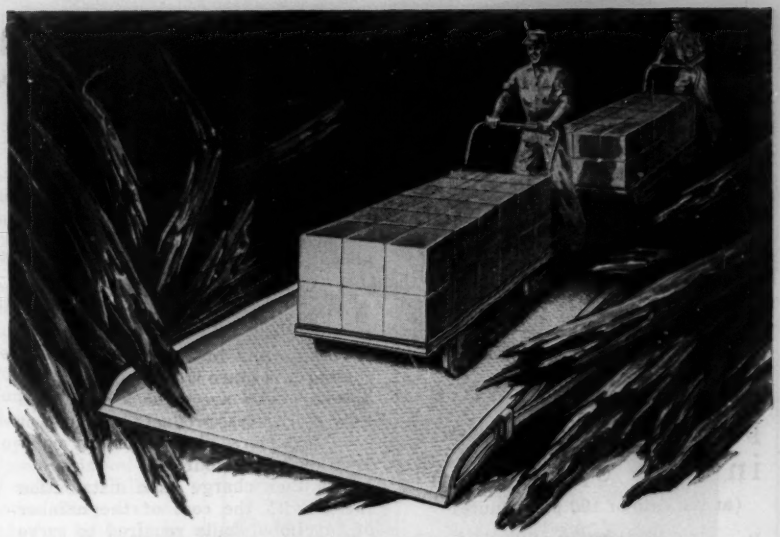
Across-the-Board Tax

An across-the-board, proportionate increase in gasoline and license taxes would provide the most equitable method of obtaining new funds. Among other things. it would impose proportionately greater payments on trucks than on passenger cars, as is now the case under existing tax structures.

It also would avoid the establishment of any of the currently-proposed third-structure taxes, such as the ton-mile or the weight-distance tax, which are inequitable, inefficient and unscientific.•

Editor's Note: Mr. Mullady's remarks are taken from a paper presented at the Associated Traffic Clubs of America 30th annual convention in Boston, Sept. 22, 1953.

(Resume Reading on Page 40)



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Circle 117 on Readers' Service Card

Function—Factor . . .

(Continued from Page 29)

these factors are charged to them and the result will show the distribution cost per product, territory, method of sale and customer. Management may carry on the costing to secondary factors as it sees fit reallocating the costs allocated to the primary factors.

Distribution Cost of Factor

The routine in this phase of the costing procedure is to first determine how the costs are to be accumulated —by territories, products, methods of sale, customers, all four or any combination of the four.

You then charge each distribution factor with the cost of the number of functional units required to serve it. This gives the distribution cost of the factor.

Comparison of the profitability of the various factors in distribution will determine what products, customers, territories or methods of sale are most desirable.

If the costing is carried further, it will tell what salesmen are most productive, the cost per customer, or unit of product, the cost to bill, pack, handle, deliver, collect, the cost of selling the wholesaler, the retailer, by direct-mail, etc.

Direct and Indirect Costs

When costing distribution management must break down the usual book recording on expenses to functional costs, then by means of a distribution measuring unit, the cost of the function is again broken down to unit functional costs.

When making this switch from financial accounting to distribution cost accounting, management will find that it has two sets of costs, direct and indirect.

Direct costs are directly incurred by the function, hence charged to it en toto. Indirect costs are incurred for the benefit of all and should be allocated.

We cannot do more in this space than point out that when costing the function set up by a management, those costs that can be earmarked as directly chargeable to a function should be so charged. Those costs not directly incurred, but which are utilized by all functions, such as institutional advertising, salaries of executives, should be distributed to all functions on a basis fair to all.

Few Cost Distribution

From our field experience, we believe that no more than 5 per cent of the manufacturers, wholesalers and other distributors in this country cost distribution properly or make any attempt to cost it.

All know their distribution expense for the business as a whole. It may not be degregated properly on the books but the outlay is recorded there and can be determined with comparatively little trouble. The outlay, however, is not recorded by functions.

The comparative analysis of natural-expense items merely shows the trend of such expenses from period to period, it does not tell why the expense went up or down, whether the increase was desirable or undesirable.

Large vs. Small

For the smaller businesses, distribution costing by nature of expense may be the only practical method. Larger companies need a more adequate method to cost distribution properly.

Prof. H. F. Taggart gives a practical answer in his book "Distribution Cost Accounting for Wholesaling."

He says, "One of the things often overlooked in connection with cost analysis and budgetary procedures of this sort is that they do not have to be either complete or highly refined to accomplish a great deal of good.

A Small Start

"A small start can be made with very rough data and the scheme gradually improved and expanded until it reaches the point at which further refinement would not be reflected in enough improvement in management to repay the cost.

"Often there is hesitation in embarking on a program of this character because of a mistaken impression of the magnitude of the job, the complications of the procedure, and the increased statistical and accounting cost.

"To begin with, however, only one or a very few functions may be isolated, and the experiment can be carried only as far as it proves itself desirable."

Sloth's Pace

Over the past 20 years, distribution costing has been moving at a sloth's pace. Our field contacts indicate that the pace has quickened during the past year or two. All managements should do something about it now, if only in a limited way.

With variations, the function-and-factor method of costing distribution for the manufacturer can be used by the wholesaler, retailer and warehouseman.

All engaged in the distribution of production should cost their operations, then analyze them for irregularities and take steps to keep distribution costs at minimum. •

(Resume Reading on Page 30)

DA Renegotiations . . .

(Continued from Page 42)

The Board has adopted the policy of continuous review of the raw material exemption list.

Many companies engaged in work involving raw materials not now included on the exemption list may make application requesting the inclusion of such raw materials.

Visits by Panel Members

It is recommended that all companies who have never experienced a visit by renegotiation panel members should request such a visit before entering into final negotiatons with the Regional Board assigned to their company. Conducting the panel members through your plant and explaining the intricacies of the operations carried on by your company can prove beneficial at the final settlement.

The Renegotiation Board is of the opinion that most companies are sufficiently familiar with renegotiation that they can complete their segregation of sales and allocation of costs within a period of five months. They are reluctant to grant any extensions beyond this time. It is suggested, that in order to have your record clear, that you file within the five months' period, but continue to make any study that you feel will further clarify your position. You can always submit an amended report at a later date.

Regional Boards are making every effort to include all proper costs on defense work. We have found that various analysts are sympathetic to the problems of defense contractors. They cannot make arbitrary adjustments; therefore, it is to your advantage to sit down with Panel Members and explain your problems of allocating costs. They recognize that in many cases costs are higher on defense work, but it is necesssary to have some reasonable base before they can accept a determination not based on actual costs.•

(Resume Reading on Page 43)

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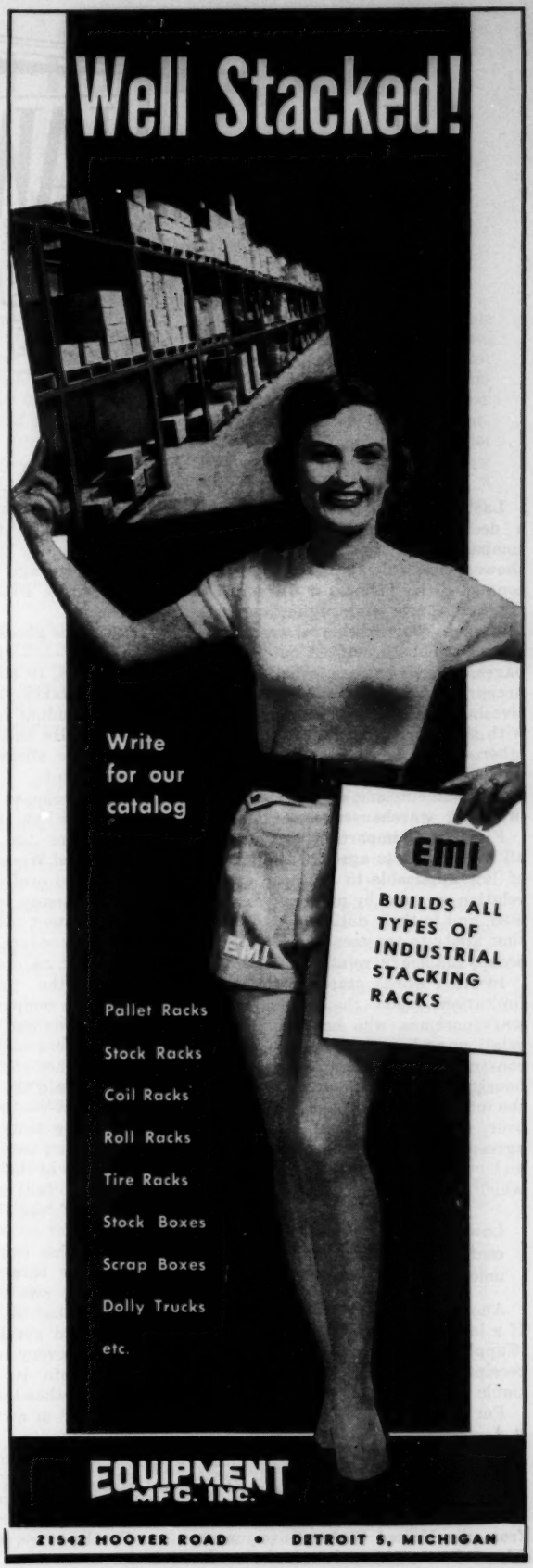

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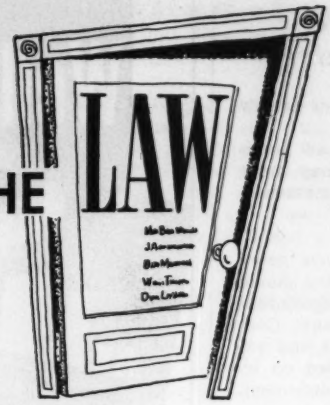
WITHIN THE LAW



By Leo T. Parker
Legal Consultant,
Distribution Age

WAREHOUSING

Last month a higher court rendered a decision adverse to a warehouse company simply because the testimony showed that officials of the company conducted the business in disregard to six valid laws and regulations pertaining to warehousemen.

As previously pointed out in these pages, warehousemen who want to prepare to avoid and also win expensive law suits should become familiar with the Warehouse Receipts Act and other similar laws. Also, readers will do well by keeping informed of the cause and outcome of new law suits involving warehousemen.

First, it is important to note that all higher courts agree that the rules of law applicable to the position and relation occupied by public warehousemen, and to their duties, are the same that apply to trustees and others who occupy fiduciary relations.

In other words, state laws establish limitations upon the power of the warehousemen who have confidential relation and such laws are strictly construed by the courts against warehousemen, if any doubts arise as to the interpretation of such laws. Moreover, any and all oral and written agreements between warehousemen and owners of stored goods are void which violate valid laws.

Law applies to negotiable and non-negotiable receipts unless it states otherwise.

Another important point of law is: If a law fails to specifically state that it applies only to negotiable warehouse receipts, it is applicable to both negotiable and non-negotiable receipts.

For example, in M—— Trading Co. v A—— Storage Co., 113 N. E. (2d) 195, testimony disclosed complicated facts, as follows: 800 hospital tents, together with a number of poles and stakes, were purchased by one W—— from the United States Government. These items were delivered to the A—— Storage Co. for storage. One year later W—— advised the warehouse company that he desired to take the tents out of storage and the warehouse company gave W—— a statement of storage charges in the sum of $1,949.78, which was paid in full by check.

After the goods were removed from storage W—— discovered a shortage of 20 tents, 19 bundles of poles and 4 cases of stakes. Actually 20 complete tents, including poles and stakes, were missing. He sued the warehouse for $3,980, the alleged full value of the missing tents.

The warehouse defended the suit, as follows: First, its officials testified that before the warehouse receipts were issued W——, in a conversation, had agreed orally to allow the warehouse company to pay $100 for each complete tent which it sold. Based upon this conversation the lower court found that an oral agreement existed between the parties whereby the warehouse company was authorized to sell the tents and remit to W—— $100 for each tent sold.

The higher court reversed this verdict and held the warehouse company liable to W—— for the full value of the missing tents. In this respect, the higher court said:

"We are of the opinion that the oral agreement fails to conform with provisions of the Warehouse Receipts Act."

The higher court held that the oral agreement between W—— and the warehouse was void because the law provides that although warehouse receipts need not be in any particular form, yet every such receipt must embody within its written or printed terms whether the warehouseman has an interest or ownership in the stored goods.

No indorsement showing the ownership or interest of the warehouse company appeared on the receipts, which were before the court.

Furthermore, the Warehouse Receipts Act clearly provides that a warehouseman cannot escape liability to the original storer of goods for the full value of goods which the warehouseman claims he purchased from the storer, unless the sale was made at the time or after the goods were accepted by the warehouseman for storage. In holding void the oral agreement between the warehouse and W——, by which the warehouse could sell the stored tents and pay $100 each therefor, the court said:

"In the instant case the alleged oral agreement under which defendants (warehouse company) claim their title or interest took place several months prior to the deposit of the merchandise and issuance of the warehouse receipts. Therefore plaintiff was entitled to delivery under the Act notwithstanding the alleged oral agreement to the contrary. Evidence of the oral agreement should not have been considered."

Then again, the warehouse receipts given W—— by the warehouse company contained this clause: "No transfer of the ownership of these goods will be recognized unless entered upon the books of the company and on this Warehouse Receipt."

No such entry on the books of the warehouse company was made and no such indorsement was upon the warehouse receipts."

The court held that such an omission would have rendered the warehouse company liable to W——, even if there was no other legal reason for holding the warehouse company liable.

In an endeavor to offset the above errors on the part of the warehouse company its legal counsel argued that as the above mentioned Warehouse Receipt Act did not specifically indicate that non-negotiable were included, the law was applicable to negotiable warehouse receipts only and hence the non-negotiable receipts given to W—— by the warehouse company were not within scope of the Act. In this respect, the higher court said:

"Defendants contend that the sections of the statute apply only to negotiable, and non-negotiable receipts. We do not agree. The paragraphs quoted make no such distinction, and where in other portions of the Act such distinction was intended it is expressly set forth. The Warehouse Receipts Act is declaratory of a long established policy intending to protect the public and depositor against any temptation on the part of the warehouseman toward overreaching. This is in considerable degree the reason why they are required to be licensed."

So, therefore, according to this decision the warehouse company failed to legally and properly conduct its business with W—— first by making, before the goods were accepted for storage, a contract with W—— to sell

tents and pay $100 for each tent it sold; second, by not having an endorsement on the warehouse receipts showing the contents of the oral agreement; third, by not entering on its books, notations or endorsements showing the dates tents were sold and the transfers of ownership of these tents from W—— to the warehouse company;

Fourth, by not entering such endorsements on the warehouse receipts; fifth, by not realizing that if a law merely mentions the word "warehouse receipt" both negotiable and non-negotiable warehouse receipts are affected and within the scope of the law; and sixth, by not knowing that laws regulating warehousemen are broadly construed and intended primarily to protect the owners of goods against unfair practices.

Higher court holds that grain damaged by flood is not merely "out of condition."

Modern higher courts consistently hold that "strictly" construe laws relating to merchandise stored in warehouses. This statement of law impressively is verified by a new higher court decision which held that stored grain damaged by flood waters is not merely "out of condition."

For illustration, in M—— v. B——, 258 Pac. (2d) 341, it was shown that a state provides that when a warehouseman discovers that any merchandise, particularly perishable goods, is "out of condition" he may sell it at public action and the owner will suffer.

One M—— was the owner and holder of negotiable warehouse receipts issued by a warehouseman representing 546,306.04 bushels of yellow milo. For several weeks the entire watershed of a nearby river had been deluged with rains of great intensity, resulting in the river carrying a very large volume of flood water.

The heavy rains continued, resulting in the river suddenly overflowing and flooding large industrial areas along its watercourse, including the area where the warehouse was located. The stored milo was damaged by the flood waters and the warehouseman decided that it was "out of condition" and, as per the above mentioned law, sold it at public auction at the highest possible price.

In subsequent litigation the higher court held that merchandise damaged by flood waters is not controlled by laws relating to goods "out of condition." The court said:

"The statute under consideration has no application to the facts of this case. Holding as we do that the flood-damaged grain is not "out of condition" grain within the meaning of the statute in question, and that the stat-

(*Please Turn to Page* 83)

MHI Handling Clinic

As a service to readers, DA is presenting a series of questions and answers taken from the MHI-AMHS Traveling Clinics. The questions and answers are being reproduced here because of their general value and because many DA readers are unable to attend the clinic sessions.

Q. *We are interested in handling reels of cable with a fork truck. Reel sizes are 18 to 60 in. in diameter and weigh up to three ton. Stacking is to be on flanges. For transport to and from storage yard, reels are on perimeter. Reference was made to a truck and rack developed for Western Electric Co. to handle and store such reels. It uses finders on the base of the truck to contact lock releases. This prevents possibility of a reel being released when not well seated.*

These reels are rolled on the utility company truck using a power winch. They are removed in the field in the same manner. They are stored on the flat, one reel on top of another. Dunnage is placed to protect the flanges.

A. The consensus seemed to be that a standard atachment rotation head with hydraulic clamps (probably four arms- two each side-offset) and modified so that two arms of clamps slide in and their cutout close around the flange of the reel would be suitable. Attachments similar to this have been produced by mosts fork truck manufacturers.

Q. *In drug manufacturing empty bottles are shipped by the bottle manufacturer to the drug company packed in corrugated containers. The bottles, after filling, are put back in the same cartons for shipment to customers.*

At the present time 40 x 48-in. pallets are used by the drug company. They would like to have the cartons shipped in on expendable pallets which would go through manufacturing, storage and shipment with the cartons and filled bottles as a unit for distribution nationally to 14 points.

A. The problem of expendable pallets for use from original manufacturer to local distributor or dealer has been a matter of interest and study for a long time. Most people look on this as the necessity for development of a pallet in the neighborhood of 75 cents each opposed to the cost of a wooden pallet of approximately $2.65.

The opinions expressed indicated that there should be more to it than the price alone.

Suggestions were made that a cost picture be drawn up showing the net cost in the plant of the bottle manufacturer for handling packing, storing, loading, shipping and freight; the cost in the plant of the drug manufacturer for unloading, palletizing (including cost of pallets and maintenance), unscrambling excess cost due to breakage, repacking, storing, loading, shipping and freight as the material is handled at present.

Then consider the net costs through all the operations above, palletizing at the inspection department of the glass manufacturer (on a pallet of preformed or molded plyboard, plastic, or corrugated weighing no more than 25 lb. as opposed to 100 lb. for a wood pallet) caryring the cartons (these could now be made of lighter test corrugated at a considerable saving) on this unit through loading, shipment (freight savings) to distribution points.

Analysis of these comparative figures might well convince the bottle manufacturer of the desirability of palletizing for his own benefit, and the drug manufacturer of the saving which would warrant paying the bottle manufacturer, if necessary, to palletize.

An Editorial SOS

The following issues of DISTRIBUTION AGE and its predecessor, DISTRIBUTION and WAREHOUSING are needed to complete DA's file of bound copies: January, 1944; January, 1945; July, 1946, and April, 1949. To those readers who have these particular issues on hand, and who are willing to part with them, DA will be deeply indebted.

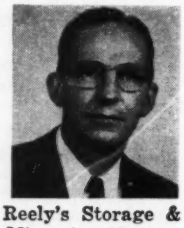
Warehouse SPOTLIGHT

Men In The Spotlight

William Brown, formerly assistant manager of Cincinnati Merchandise Warehouse—appointed western manager, Allied Distribution Inc. with headquarters in Chicago, Ill.

Ward G. Walkup, San Francisco transport and warehouse executive—appointed by Governor Goodwin J. Knight to California's Board of State Harbor Commissioners.

Edward G. Mooney, president and treasurer of Hartford Dispatch & Warehouse Co., Hartford, Conn.—congratulated on completion of 25 years as a member of board of directors of Allied Van Lines, Inc.



Harvey F. Smith — named sales manager of the Pittsburgh warehouse of Follansbee Steel Corp., formerly manager stainless steel sales.

G. Evan Reely, Reely's Storage & freight Terminal, Missoula, Mont.—awarded **Gale D. Whitney Trophy,** presented annually to a member of the Montana Motor Transport Assoc. performing the outstanding civic and community service during the year.

Commander J. J. Hughes, prominent member of NARW and president, The Terminal Refrigerating & Warehousing Corp., Washington, D. C., passed away recently in Washington. He gained fame as skipper of the gunboat "Panay" when bombed by the Japanese before Pearl Harbor.

—DA—

Owentown Refrigeration & Storage Co., Tyler, Texas, is new member of the National Association of Refrigerated Warehouses.

Household Goods Carriers Elect Officers

At a recent meeting of the Household Goods Carriers' Bureau in Washington, D. C., Harrel McEachern, Washburn Storage Co., Macon, Ga., was elected president. Willie Weathers, Weathers Bros. Transfer Co., Atlanta, Ga., vice president; Harold Blaine, Lyon Van Lines, Los Angeles, Calif., secretary; and L. A. Larimore, United Van Lines, St. Louis, Mo., treasurer.

New Warehouses

Central Warehouse Co., St. Paul, Minn., will construct a new warehouse, containing 950,000 cu ft. Work is expected to be completed about May 1, 1954.

Union Ice Co. of California announces opening of its newest plant in San Jose, the firm's third serving the area. It has three storage rooms, one with 260,000 cu ft, another with 132,000 cu ft and a third with 127.000 cu. ft.

Haslett Warehouse Co., San Francisco, Cal., have opened new executive offices, 680 Beach St.

Riverside Warehouses, Inc., is enlarging its facilities to provide new office arrangements for rental purposes. The size of the distribution dock is also being doubled.

Paul Arpin Van Lines, Inc., Providence, R. I., recently purchased two fireproof warehouses, one of which has over 60,000 sq ft of storage space with railroad siding and 15 loading and unloading platforms; the other building consists of more than 11,000 sq ft with three additional loading and unloading platforms.

Keeping the Faith

By Wilson V. Little
Executive Secretary
AWA, Merchandise Div.

Said Elbert Hubbard, the "Fra Elbertus" of the Roycrofters of other days, "An institution is the lengthened shadow of a man."

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The public merchandise warehousing industry in general is indebted beyond measure to these old-time companies in the business, to their founders, and to the successive generations of men who have operated them.

On the Archives Building, in Washington, appears this legend, "What Is Past Is Prologue. Study the Past." The high standards inherent in the public merchandise warehousing industry for moral responsibility, business integrity, and superior service are not of recent conception. Taken now for granted, they were formulated by the wise and far-seeing warehousemen of decades ago.

The part they played in their day is "Prologue" for us now and sets the stage for the reputability the industry today enjoys, and for the recognition universally accorded it as an essential and dependable instrumentality in the nation's distributive economy.

For Additional Warehouse News, See Chuting the News, Washington DA and Within the Law

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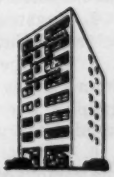

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. . . Truck Performance

(Continued from Page 27)

Each of the elements of operation is measured individually and under controlled conditions. That is, the element is performed and measured away from the production area and without regard to delays due to traffic and other things. Description of the method of measurement of each element follows.

Travel

Maximum Speed

1. Layout a 100-ft straight course on a section of floor typical of that in the operating area. In most cases the truck will reach maximum speed before traveling 100 ft.
2. Mark off 10-ft increments.
3. Start the truck from a dead stop at one end and travel with maximum acceleration along the course.
4. Measure the time for the truck to travel the various distances.
5. Plot the distance and time values found from the measurement on a graph. See Fig. 2 for a typical example of a graph of the travel time.
6. Repeat measurement for each of the various sizes of loads to be carried.

Creep Speed

1. Start truck from a dead stop and travel at creep speed.
2. Measure time to travel various distances.
3. Repeat measurement for various load sizes.

Braking

1. Management must determine distances required to bring truck to safe, smooth stop. Distances are dependent upon the variations in load type and speed at which truck is traveling prior to braking. These distances range between 10 and 20 ft for 4000-lb fork trucks traveling at 6 mph.
2. Measurement of the braking operation is made with a stop watch while the operation is being performed under test conditions.

Raising—Lowering Forks

1. Measure distances of 6 in., 1 ft, 2 ft, 3 ft through the maximum height to which the fork can be raised on a wall or post.
2. Raise and lower the forks to and from the various heights.
3. Measure with a stop watch the time to raise and lower the forks under the various loads.
4. Plot a graph of distance vs. time for raising and lowering the fork. (See Figs. 3 for examples of a typical electric truck.)

Tilt Fork

1. Operation of tilting mechanism is best measured by timing separately each operation for which it is used.

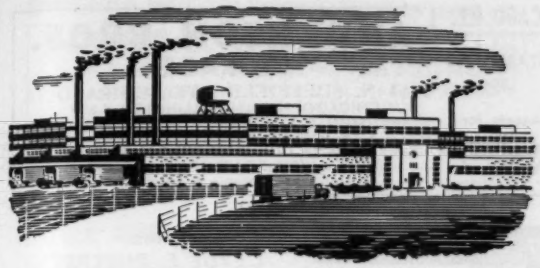
Manual Elements

1. Measure individually each manual element required to operate truck.
2. Use of predetermined time values, such as MTM, have been extremely successful for this measurement.

Data found from a measurement of this type must take into account capacity variation due to load being carried, change in power supply (i.e., battery on electric trucks) and floor conditions.

Once maximum capacities are measured, the data can be set up for use in measuring all the operations that the truck performs. This type of data will permit the setting of a standard time for an operation accurately and in about five per cent of the time required by time study.

The following example of the application of measurement to an actual



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warehouse operation will give complete insight to this method.

The operation is one of warehousing where 55-gal drums of liquid are received, stored and dispersed to production. Battery power fork trucks are used in all handling of drums in the warehouse.

Drums are received in trailers, 16 pallets to a trailer and four drums to a pallet.

The layout of the storage area consists of 12-ft aisles with the pallets of drums stacked three pallets high and one pallet deep from the aisle as shown in Fig. 1. Drums are shipped in the same manner they are received.

Safety Rules

Because the major safety hazard in this operation is the spillable nature of the material being handled, it is necessary that the safety rules be designed to eliminate this possibility. Procedures for this operation are based on the following rules.

1. Trucks traveling in Aisle Z have the right of way.
2. Horn must be sounded when entering Aisle Z.
3. When traveling in Aisle Z, travel in lane away from the doors.
4. Use maximum speed when traveling between stock area and dock.
5. Do not carry forks above 6 in. from floor while loaded truck is moving.
6. Load should point in direction of travel when moving between stock area and dock.
7. Cross dock plate into trailer at 2 mph.
8. Travel while in trailer at average of 1 mph.
9. Travel out across dock plate at 2 mph.
10. Y out from trailer at maximum acceleration.
11. Y in and out from stack at creep speed.

Drums In—Drums Out

Two procedures are required to describe the entire operation, one for drums coming into the warehouse and one for drums being shipped out of the warehouse. These procedures are outlined in Figs. 4 and 5.

Description of the operations are in terms of the six basic elements and show each element in sequence.

Time value for each element is found through the measurement of the six elements and can be shown on the sheet with the description of the operation. The sum of these time values plus the allowances for rest and delay is the time required to perform the operation.

Rest allowance (personal and fatigue allowance) is determined according to company policy. Standard times in this example include a 15 per cent rest allowance for the entire operation including checking duties.

Delay allowance is determined by making an 8- to 16-hour study of the operation and measuring by means of a stopwatch, delays encountered.

The uses to which this measurement can be placed are many. The most important is in cost control.

Another area to which we are applying this measurement system is the planning of future materials handling truck operations. In that the time values can be predetermined without regard to the actual operation, the system lends itself very well to this use.

The measurement data also will permit the comparison of truck types to determine which type is most suitable for an operation from the standpoint of production or time required to perform the operation.

One of the problems which prevents materials handling trucks from being effectively used, is that the major consideration today in selecting and applying such trucks are maintenance and safety.

Since the purpose for which an individual purchases a truck is production improvement, productivity must be considered a major factor. •

(Resume Reading on Page 28)

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Plant Location . . . .

(Continued from Page 25)

is the nearest large scale market, a distance of a thousand miles or more. To the east and south sizable population centers are hundreds of miles distant. On the north large groupings of population are nonexistent. Consequently, the transport problem is foremost as a location factor in this area.

Within the area itself, the average haul for motor carriers is about 85 per cent greater than for the average of the United States.

Raw Materials

Postwar industrial growth in Utah has produced firms which sought locations near the minerals of the state. The largest new firm is the Geneva Steel plant which was purchased by U. S. Steel from the federal government in 1946.

U. S. Steel was asked by the government to build a steel mill in the West during the war. It was feared that should the Panama Canal be closed by enemy action, the West Coast would face a serious steel shortage.

The Provo location was chosen in order that the distance for the haul of the raw materials of limestone, coal, and iron ore might be at a minimum. Thus, transport costs dictated a location a thousand miles away from the principal market of the produced steel, i.e., the West Coast.

The Geneva plant has in turn drawn a number of steel fabricators such as the Chicago Bridge and Iron Co. and the Commercial Shearing and Stamping Co. of Youngstown, Ohio, in order that the steel for fabricating operations might be transported a minimum distance before being changed into structural shapes.

Colorado's Case

In the state of Colorado few new enterprises have been attracted to the state's minerals. Rather, economic activity has been oriented to the Rocky Mountain market, nonunion labor, and the so-called noneconomic factors mentioned earlier.

A few mattress companies have come into the state to service the region's markets. A bulky commodity like a mattress must be produced near its market or else the transport charge becomes prohibitive. The same is true of battery production. A few companies have come to Colorado to get near the western market.

The problem of transportation has also been posed for the manufacturing or assembling of products in Colorado and Utah. If the raw materials, semi-processed goods, or supplies cannot be obtained within the area, and for many manufacturers they cannot, then they must be transported from points hundreds of miles distant.

Long Haul Problem

It has been a common observation by many producers in these two states that practically all of their materials and supplies must be hauled hundreds of miles to producing points.

The Wells Lamont Glove Co. of Fort Morgan, Colo., obtains its leather from Milwaukee, cotton from Georgia, thread from Tennessee, tape fasteners from Chicago, and only sewing machine supplies from Colorado.

Officials of one stoker company in the area noted the competitive advantage their company has over companies in the midwest desiring to sell in the mountain states.

It was estimated that transportation costs on stokers in carload lots from Chicago to Utah would run around $10 to $12 per stoker. Thus, a producer in the area is protected by the transportation tariff which ensues when outside producers attempt to cut in on local markets. •

(Resume Reading on Page 26)

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Within the Law

(Continued from Page 65)

ute has no application to such a situation, the next question is—who is to bear the loss? There is but one answer, and that is—all of the owners and holders of warehouse receipts for the grain in storage at the time of the flood, on a pro rata basis."

Of course, this court's method of deciding that all owners and holders of the warehouse receipts must bear the loss on a pro rata basis, whether or not all the stored grain was damaged by flood waters, is based on the established law that various depositors of mingled fungible goods are tenants in common of the entire mass.

Hence, where, for any cause not occasioned by the fault of any depositor, the amount of grain on hand becomes less than that for which there are outstanding receipts, the loss as between the depositors is borne by each of them at the time of the loss in the proportion which his grain bears to the entire mass deposited.

Quite obviously this rule of law never is applicable to ordinary warehousemen who accept specific goods and merchandise for storage. Nevertheless, the decision illustrates this: All laws relating to the liability for damage to or loss of goods, while in storage, are strictly construed.

TRANSPORTATION

Sometime ago I received a letter from a reader, as follows: "We have in our city an ordinance which permits in certain areas such businesses as automobile garages, bus stations, etc., but prohibits motor truck terminals. Is such an ordinance valid?"

According to a late higher court decision, the answer is yes. For example, in Borough of West Caldwell v. Z——, 91 Atl. (2d) 763, the testimony showed facts as follows:

A city passed an ordinance which in a specified zone permitted operation of public garages for purposes of auto repair. Also permitted is the storage of foodstuffs, fodder, fuel or building material, and furniture storage. Another part of the ordinance permits operation of a bus garage for interstate buses.

A truck driver was arrested and fined for operating a transfer depot and truck terminal for the loading and unloading of truck cargoes, with the use of large tractors and trailers.

The counsel for the trucking company appealed to the higher court contending that the ordinance is void because it permitted operation of a bus garage, warehouses and auto garages which activities are essentially the same as the activity which the trucking company carries on and

(*Please Turn Page*)

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MEMBER—A.W.A.; N.I. Motor Trk. Assoc.; Whse. Assoc. N. Y.

Within the Law

(Continued from Preceding Page)

that therefor the ordinance is not uniform.

The higher court refused to agree with this contention and in holding the ordinance valid, said:

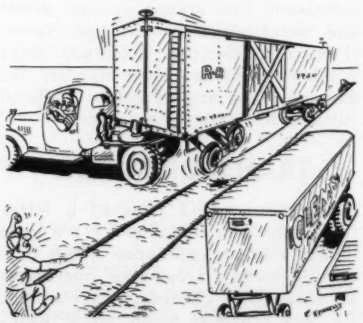
"The fallacy in this contention is the assumption that the operation of a garage is the activity here being challenged. Actually it is the operation of a truck terminal and transfer depot that is here brought in question. This activity involves the transfer of heavy shipments of commodities from one truck to another."

This court went on to explain that the ordinance seeks to prevent the operation of a truck terminal and transfer point along the main business thoroughfare. Such an ordinance is a manifestation of the underlying goal of reducing heavy traffic and is well within the police power of the municipality.

Does a state have the right to interfere with or impose burdens on interstate commerce?

The higher courts hold that a state may regulate its internal or intrastate commerce as it chooses, but it has no jurisdiction to interfere with or impose burdens on interstate commerce.

For illustration, in People v L——, 17 N. Y. S. (2d) 193, the testimony showed that one L——, a truck driver, is a resident of the State of New York and an employe of the A—— Transport. He was delivering a shipment of freight, which had been picked up by him from a consignor in Baltimore, Md., to be delivered to a merchant in Fort Plain, N. Y.



"No, no—you've got this Piggy-Back idea all wrong."

L—— was convicted in New York of operating an unregistered tractor and trailer on public highway of state because when he was delivering the freight in New York he was performing intrastate business and therefor a violator of the state laws.

It was admitted that if he was performing interstate business when arrested he could not be convicted.

The higher court held that L—— could not be convicted, and said:

"The shipment of the goods originated in Maryland and were consigned to a consignee at Fort Plain, N. Y. They started out as intrastate commerce. While these goods were in the hands of the foreign carrier in the form and shape in which they were introduced, they may be regarded as merely in transitu and on their way to their destination.

"Carriage by defendant's employers truck is interstate commerce and the tractor and trailer are interstate trucks. The tractor and trailer were instrumentalities of interstate commerce not subject to state regulation.

"The police power of the state cannot draw him within its jurisdiction objects which lie beyond it. Leisy v. H——, 135 U. S. 100, 10 S. Ct. 681, 34 L. Ed. 128. The goods were intact in their original packages and had not become commingled."

(Resume Reading on Page 65)

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Pool Car Distribution Office Facilities

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Efficient Distribution . . .

(Continued from Page 55)

shipments, there is experienced personal interest present.

3. Ease of Tracing Shipments: Since a consolidated load contains between 20 and 40 different shipments, it is much easier to trace one car or truck than several small lcl or ltl orders.

4. Economies in Routing: The pooling of these shipments reduces the number of individual routings required. Obviously, one carload or truckload routing suffices for all shipments. The number of bills of lading, freight bills requiring auditing, and checks to be issued by the accounts payable department, all are reduced in number proportionately.

5. Attractive Transportation Savings: The savings resulting from consolidation are primarily due to the spread between the lcl and carload freight rates, less handling and drayage charges at the distribution end.

Transloading Item

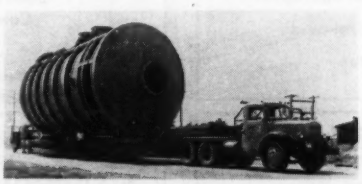
Some years ago a few rail carriers published a privilege that today produces phenomenal and extraordinary service when used in connection with consolidated stop-off cars. In my opinion, this privilege is the most significant item published in the rail tariffs today since the insertion of the stop-off rule. I call this rule the transloading item, although a review of this item does not mention the word transloading.

In substance, transloading is today's modern railroad distribution technique, because it has as its purpose the elimination of time normally lost by making a physical stop-off for partial unloading. The contents of a consolidated carload billed to a particular destination with three stop-offs en route for partial unloading will arrive simultaneously in all four cities.

Pronounced improvement in service to the shipper and to the customer is just one advantage that compels me to recommend and utilize this service. To the shipper, in addition, this privilege offers a tremendous flexibility in planning consolidations, merely by being able to associate adjacent markets. In so doing, he improves his frequency of movement to all major marketing areas.

This privilege is just not one-sided and all in favor of the shipper, for there are invaluable advantages accruing to the carriers, too. For example, there is a saving in car days. Since there is a saving in car days, there must be a saving in per diem charges.

Probably the greatest advantage to the carriers is the saving in empty car miles. In 1948, for example, 128 Class I railroads in the United States and Canada reported 11 billion empty car miles.



Heavy Move: Equipment Rentals Corp. used two Mack 6-wheel tractors and a pair of heavy duty low-bed trailers to transport this huge 117-ton, 48½-ft long test cell for testing jet engine

Transloading has an unusual economic twist. Good things or services are generally expensive. The privilege of transloading is the exception to the rule, because there is no charge assessed for this service by the carrier. Actually, transloading is an operating function, and has nothing to do with the revenue billing of your consolidated car.

If the maintenance of spot stocks in public warehouses, or if the forwarding of consolidated shipments is not possible, for one reason or another, we must not overlook the very excellent service rendered by freight forwarders as an aid in the distribution of our products.

Modern Freight Cars

Another economy in distribution, although not necessarily a technique but rather a medium, are the new and modern freight cars that are unfortunately still limited in number.

The important features of these new cars, from a distribution point of view, are several. The expense of bulkheading is completely eliminated, and this saving varies from $40 to $80 a car, depending upon the product. The second feature of this new equipment is the complete lack of any damages sustained while in transit.

The demand for goods and services, with few exceptions, are at record levels. Our challenge today is to distribute these goods promptly and efficiently. If we are successful, and being mindful of our great capacity to produce, I am sure we all shall enjoy a standard of living considerably better than that existing today. •

(Resume Reading on Page 55)

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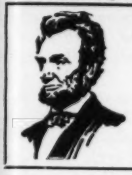
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200,000 SQ. FT. OF MODERN FIREPROOF SPACE LOCATED IN THE EXACT CENTER OF THE CITY OF MONTREAL
Canadian Customs Bonded. Private Siding — 8 Car Capacity—Free Switching—All Railroad Connections.
Represented by
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CHICAGO, ILL. NEW YORK, N. Y.

Conveyor 'Airlift' . . .

(Continued from Page 21)

per hour. It is easily reversed for unstacking and loading into highway trucks or railroad box cars.

Paper Work Conveyed

The transfer of invoices and other paper work is highly important to the smooth functioning of the supply operation. Use of a standard paper carrier was attempted, but proved unsatisfactory due to the large volume of paperwork and the different drop-off stations required. The problem was solved with the Kelly-designed conveyor illustrated on the preceding pages.

Essentially, it consists of a bicycle-type chain on which are mounted metal extensions. To each extension a swivel hook is attached. The extensions vary in length, in accordance with the number of drop stations on the line.

Forms to be dispatched are attached to the swivel hook on the appropriate extension bar. When they reach the proper drop station, a graduated trip bar contacts the swivel hook and the forms, attached to the swivel hook by a standard clamp-type clip, are released.

New River Towboat: Latest addition to Union Barge Line's fleet of modern vessels operating on the Mississippi River. Built by Dravo Corp., the Southern, is 166 ft long, oil tank capacity of 90,000 gal, two Superior Diesel engines capable of 3,600 hp

Wastepaper Airlifted

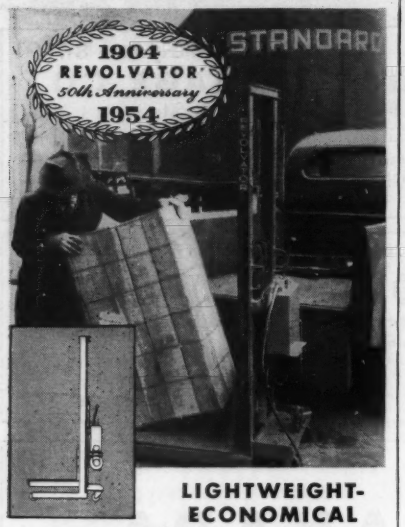
Even wastepaper is being airlifted at Kelly. The problem of wastepaper cluttering the receiving floors was solved by an overhead powered belt conveyor which transports all unused cartons, boxes, excelsior, and other dunnage to a segregation point on an outside ramp for disposal.

The mechanization of Kelly Air Force Base is an engineering achievement attributed to Maj. Gen. Clements McMullen, commanding general. In the process, he has adapted standard handling equipment and designed his own to meet particular needs.

(Resume Reading on Page 22)

Editor's Note: Watch for Part 2 of this visit through Kelly Field. It will describe Kelly's unique set-up for warehousing over 480,000 different items.

Circle 120 on Readers' Service Card



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Adaptable for shop use or warehouse handling and ideal for shipping and receiving — the new electric Uplifter is the real buy today in materials handling. In two capacities, 1000 - 2000 pounds, platform sizes 24 x 24 and 30 x 30, lifts of 62 and 65 inches on standard models — the Revolvator Uplifter can be had powered by a variety of electric circuits ranging from an automobile battery to 220 volt currents.

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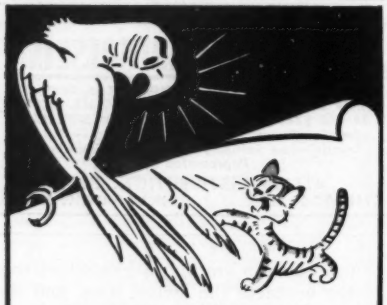

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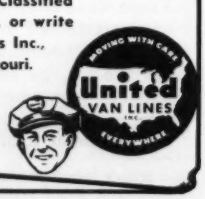
your personnel and plant moves

Your nearby United mover is listed in the Classified Phone Book . . . or write United Van Lines Inc., St. Louis 17, Missouri.



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Letters . . .

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We, therefore, must deal with cardboard containers in general within the Textile Industry. A number of textile manufacturers have found that the use of a fork truck, where volume of production permits, solves the problem for them. Some of these manufacturers use the straight fork truck, while others use a fork truck with a load grab or clamps.

Others have used small portable elevators or tiering machines if the problem is one of stowing away in storage. I am assuming that this is your problem . . . to receive, stowing, reclaiming . . . stowing and re-shipping, and I am dealing with the problem from that angle, only. If you are handling cardboard cartons in a production line, it could be handled by the flatbed truck, or belt and wheel conveyor.

My recommendation would be for you to get in touch with Mr. Sterni, of the Consolidated Textile Co., Windsor Print Works, in North Adams, Mass. He has been handling carton goods, in various size cartons, by means of a fork truck with a load grab, and with straight forks, with and without the use of pallets for several years.—Matthew W. Potts, DA Materials Handling Consultant.

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CONSULTANTS IN PRODUCT DISTRIBUTION—Transportation, traffic and warehousing. Surveys to determine plant or warehouse locations. For all industries. Elwell, Philips & Company, Inc., 287 Morris Avenue, Elizabeth 3, New Jersey.